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A GENERAL
T R E A T I S E
O F

Husbandry and Gardening.

CONTAINING

Such Observations and Experiments
as are New and Useful for the Im-
provement of Land.

W I T H

An Account of such extraordinary In-
ventions, and natural Productions, as may
help the Ingenious in their Studies, and pro-
mote universal Learning.

VOL. II.

With Variety of curious CUTTS.

By RICHARD BRADLEY,
Fellow of the Royal Society.

L O N D O N:

Printed for T. WOODWARD, at the Half-Moon
against St. Dunstan's Church, Fleet-Street;
and J. PEELE, at Locke's Head in Pater-
Noster Row. M.DCC.XXIV.

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A GENERAL
TREATISE
OF

Husbandry and Gardening,

For the Month of *October.*

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A GENERAL

TRAVELLER

OF

RELIGIOUS AND CIVIL

TRAVELLING

IN THE

WEST INDIES, AND IN THE
NORTH AMERICAN STATES

AND

IN THE EAST INDIES, AND IN THE
NORTH AMERICAN STATES

BY

W. H. DAVIS, ESQ.

Author of

"The Traveller's Guide"

London: Printed by J. B. Nichols, 1841.



T O
Mr. L A W,
T H I S
T R E A T I S E
O F
Husbandry and Gardening,
For the Month of *October,*
Is, with the greatest Respect,
Most humbly Inscrib'd by
His most Obliged
Humble Servant,

R. Bradley.

THE UNIVERSITY OF CHICAGO PRESS

OF

MR. E. N. W.

THIS

TEST

OF

THE UNIVERSITY OF CHICAGO PRESS

FOR THE MONTH OF OCTOBER

TO THE UNIVERSITY OF CHICAGO PRESS

AND THE UNIVERSITY OF CHICAGO PRESS

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A GENERAL
TREATISE
OF

Husbandry and Gardening,

For the Month of *October.*



HIS Month begins my Third Quarter, which I shall introduce with an extraordinary Case relating to Vegetation ; from whence we may gather many good Hints relating to the Doctrine of the Sap's Circulation ; which Study, in my Opinion, ought to be propagated as much as possible among the Professors of Husbandry and Gardening, that they may work upon sure Grounds.

An Account of the accidental Blossoming of a Pear-Tree in this Month, with some Remarks concerning the Circulation of Sap in Plants.

IT is no new Thing to observe Fruit Trees of every Kind, to blossom now and then out of their natural Season ; and yet I have not found any Author, who has yet attempted to explain to us the Cause of such Appearances.

Mr. *John Millet* indeed, a very ingenious Gardener, late of *North-End* near *Fulham*, was accidentally brought to consider how far this Chance-blossoming of Trees might be render'd advantageous, as appear'd from his bringing Fruit, such as Apricots and Cherries, to good Perfection, some Months before Nature alone would have done it ; but I could never hear him assign any Reason more for what he did, than that the Heat he lay'd at the Back of his Frames would push the Trees nail'd against them into Blossom, a few Weeks after he had apply'd the Heat. But, as I had some Familiarity with him, and he often shew'd me his forward Garden, I observ'd that he pruned his Trees out of the common Season ; but neither he nor my self then thought more of it, than that the Trees prun'd in such irregular Seasons were ready for blossoming and shooting, when he was disposed to apply an Heat to the Back of his Frames.

The Rose-Trees, which he commonly had in Blossom soon after *Christmas*, of that Sort call'd the Monthly Rose, were always nail'd against the same Frames where his forward Fruit-Trees grow : He told me, his Way was to prune off all the Flowers, whether Rose-Bud or open Flowers, which were found upon them, about the End of *July*, or Beginning of *August* ; and at the same time he cut off the Top of all those Shoots, which had produced Flowers that Summer, as well as those which had not ; but he said likewise, that his chief Dependance was upon those Shoots which had been Bearers the same Summer : from whence, says he, every close
Bud

Bud will about six Weeks after Pruning spring and shoot ; and when the Heat comes to the Tree, every one of the new Shoots will bring Flowers at their Extremity. And I have often seen in my own Practice, that without this Sort of Pruning, the close Buds I speak of, will lie dormant all the Winter, without stirring till the Spring advances. So I have likewise observ'd in Fruit-Trees, in several Gardens, where the Skill of the Pruner has not been extraordinary, that by cutting Fruit-Trees too early, or topping the Shoots of the same Summer, the Buds left upon those Shoots sprouted suddenly before their natural Time, and have come to blossom at a wrong Season.

But this Pruning alone is not of any valuable Use, unless we can humour the blossoming Times of such Trees, with a Degree of Heat sufficient to bring the Blossoms to Perfection in ripe Fruit: And as this Degree of Heat must be produced artificially, so we ought to enquire how it acts upon the Roots or Branches separately, or whether it has the same Influence upon both ; which leads me to the following Account, and from the Observations which have been made upon it, to clear up the Doubts, as well as we can, of the Effect extraordinary Warmth and uncommon Pruning may have upon Plants.

The Case, as I receiv'd it from Mr. *Edon*, a noted Builder near the *Monument*, *London*, is this: In *April* last, near *Moorfields*, he had Occasion to build several Houses in an open Piece of Ground, which had formerly been, as I imagine, a Garden ; for I find upon In-

spection, many large Pear-Trees of great Growth are now standing ; one of which, that happen'd to lie nearest to the Place of Building, was appointed the Spot where the Workmen were to slack their Lime : At the Beginning of the Work, the Tree was full in Blossom, and promising of good Fruit ; but Mr. *Edou* supposes, that the Slacking of the Lime about it was the Reason it did not produce any Fruit that Summer, and made the Tree to loose its Leaves sooner than other Trees.

The Lime was brought fresh about three or four Times every Week, about two hundred at a Time, which sometimes was lay'd on one Side, sometimes on the other Side of the Tree, and now and then touch'd the Bark of the Tree, so as to reach about five Foot high of the Stem, the which Stem is near a Foot diameter ; and it was observ'd likewise, that the Lime for the most Part was lay'd on that Side of the Tree which was next to the Buildings, which this *October* has the greatest Share of Blossoms : This Practice of slacking the Lime about the Tree, was continued till *August*, at the End of which Month a fresh Set of Blossoms began to open, when I observ'd them as fair and promising of Fruit, as any I had seen in *April*.

In the mean while, I also remark'd some vigorous Shoots of the last Year, which measured about a Yard and an half in Length that were set with Blossom Buds, from the Top to within a Foot or ten Inches of their Bottoms : The Reason of which, I shall have Occasion to mention by and by.

From

From this Practice of Mr. *Edon's*, it seems that the slacking of Lime over the Roots of a Tree, will occasion the Tree to blossom a whole Season before its Time, or may be said to gain one Season in three compleatly; for the natural Heat of the Summer alone would have only given us plain Shoots, perhaps without blossom Buds, and the following Year at the soonest in some sorts of Pears, would have mark'd those Shoots for Flowering the succeeding Spring. But this Accident has not only made the Tree shoot, but has set those Shoots for Blossom, and has even open'd those very blossom Buds in so temperate a Season, that many of them set for Fruit; and in *October*, when I gather'd some Branches, I observ'd some young Fruit that were as large as Hazle Nuts.

What I can judge from hence is, that the slacking of the Lime three Times *per Week* over the Roots of the Tree, has given such Heat and Moisture at those Times to the Roots, as was necessary to make them shoot more vigorously than they would otherwise have done; and that the Lime Water, which at such Times soak'd into the Earth, afforded those Roots such a share of extraordinary Nourishment, as their extraordinary shooting required.

And the intermediate Times between the Slackings of the Lime might perhaps be so checking to the Growth of the Roots, which were vigorously set to Work by the hot Lime, as might occasion the Shoots from them to knit for bearing the same Year.

As in the Account from Mr. *Edon*, I find Lime very seldom touch'd the Bark of the Tree, so it appears that the Lime acted only upon the Roots, and that Action put all the other Parts of the Tree in Motion, even when every other Tree was out of Growth or without Shooting: And more particularly we may observe, that the Shoots of the Tree on that Side where most of the Lime was slack'd, were fuller of Blossoms than the rest, and flower'd sooner. From whence we may guess, that every single Fibre of the Root has its Twig or Shoot which corresponds with it, which in point of Pruning ought to be had a great regard to: For I am satisfied, that if we heat only the Root of a Tree, or nourish one Root more than the rest, the Branch which corresponds with that Root will give us evident Proofs of its Coherence with the Root that has been warm'd or enrich'd, and at the same Time all the rest will remain unmov'd. From the Observations I have made of those Plants which were planted against Mr. *Millet's* Pailing, I find that when the Dung which was lay'd at the back of those Pails, to bring the Trees forward, began to heat, a Bud here and there began to swell and proceed to blossom before the others; sometimes at the Extremity of a Branch, sometimes in the Middle of the Branch, and no where else in the Tree. And this I take to be the Consequence of heating more than ordinary some of the Roots of the same Plant, which happen'd to lie under the hottest Dung. A young Fibre of a Root would certainly be more sensibly touch'd
than

than a larger Root : And as the smaller Fibres are always the extream Parts of the Roots ; so it is natural to suppose, that their immediate Correspondence is with the youngest or tenderest Buds or Parts of the Tree. And indeed, in the Anatomy of a Plant or Two that I have done with the Microscope, it plainly appears to be so ; but my Notes upon those Anatomical Discoveries would be too many to insert at present.

These Observations, with what may be commonly observed in Trees which fling out now and then at unnatural Seasons a few Blossoms, may seem to inform us, that the Root being first put into Motion, must necessarily force all its correspondent Parts to answer its Growth : But there will arise this Objection ; How comes it to pass that the Branches of a Tree which are nailed against the back of a Chimney, where a Fire is constantly kept, and which Fire has no Communication with any of the Roots but by the Branches, should as readily blossom in Winter as what we have been speaking of ; for here some will be apt to say, the Root does not push before the Branch ? But in Answer to this we must take notice, that the Branches and Roots of a Tree make one Body, and therefore the Juices in the Vessels of one being set in Motion, must push forward the Juices in the Vessels throughout the Whole. And again we may observe, that in Vegetation, Plants, for the Generality, are disposed to push out Roots from their Branches, and Branches from their Roots, as one or the other is placed in the Earth or Air ; which I think

think is no small Proof of the Circulation of Sap, as it shews that the Intent of Sap is the same in every Part of a Tree.

And yet, once more we must take Notice, that as in our Case of the Tree against the Chimney, the Motion of the Sap in Winter begins in the Branches, so is its Progress through the whole Plant from thence ; which we may account for by the Rarefaction of those Juices which are first warm'd, and by natural Progression or gentle Degree liquitate and force on the rest, till all are of the same Consistence, and have circulated to the same Point where the Motion began ; and then the whole Sap being of one State, a continued Application of the same Degree of Heat will keep it in continued Motion. And thus far, at present, I shall give my Observations for helping the Circulation of Sap, viz. that there is such an Harmony and Correspondence between the Juices or Sap in the Branches of Trees and that in the Roots, that whatever Part is first set in Motion by Heat, will cause a like Motion in all its concomitant Parts.

That we may follow the Remarks upon the Pear-Tree with something harmonious to it, I shall insert an Account of an Experiment which has been made in *Holland* with good Success, and is now under Mr. *Fairchild's* Management at *Hoxton*, which will be another Proof of the Circulation of the Sap in Plants ; and that is the Way of Planting a Tree the wrong End upwards, or with the original Roots in the Air.

Notwithstanding the many evident Proofs we have of the Sap's Circulation, I meet with a few who have made firm Resolutions with themselves never to believe it ; and by the same positive Rule, would pin down the Belief of others with that quaint Way of Reasoning, that they are assured there is not any Circulation of Sap in Plants ; but they are content to avoid disputing about it, it is enough that they are not of that Opinion, they laugh at it and drink their Bottle : But I am so little concern'd at the Conduct of these Men, that I shall still continue, as Occasion offers, to give the World such Instances of the Sap's Circulation, as shall occur from Time to Time to my Memory, for the sake of those who have already improved their Skill in Planting, from the Knowledge they have of it, and those others who are beginning to think of it.

The Relation which I design at present is of a Lime Tree in *Holland*, which is now growing with its first Roots in the Air, which have shot out Branches in great Plenty, at the same Time that its first Branches of the Head are converted into Roots, and succour the Tree : I then desire to know, if the Sap is not every where at once in the same Tree, and whether all the Sap of that Tree has not the same Intent towards Vegetation ? Those who say the Sap is in the Root all the Winter, seem, from this Instance, to be mistaken : and if it was not every where alike in the Tree, how comes it that the branched Part of the Tree exchanges its Leaves for Roots, and the Roots that were before,

change their Fibres for Leaves and Branches? Is it then not plain, that the Sap is the same in every Part of the Tree at all Times, and is constantly acting equally throughout the whole Plant?

But that we may not go so far as *Leyden* for a Proof of this Relation, Mr. *Fairchild* has began to put in Practise the proper Method for giving us some Examples of it at Home; and that those who are too remote from his Garden may not want the Benefit of satisfying themselves at an easy Rate, I shall here lay down Two or Three Ways of performing the Operation.

We must first make choice of a young Tree of one Shoot, either of Willow, Alder, Elm, Lime or Linden, or indeed any other Tree that will take Root easily by laying; and bending the Shoot gently down to the Earth, we must pinn down the extream Part of the Shoot in the Earth in the proper Season for making Layers, and let it remain without other Ceremony till it has taken Root; your whole Plant will then make the Appearance of an Arch or bent Bow above the Ground, till the new Roots are well struck; then we must dig about the Original or first Root of the Plant, and gently raise it out of the Ground till we bring the Stem it adheres to to an upright, which must be help'd by a strong Stake, for the Stem alone will encline to bend.

When this is done, we must prune those Roots that are raised into the Air from the Bruises and Wounds they received in digging them up, and apply some of the following
Mixture

Fig. I.

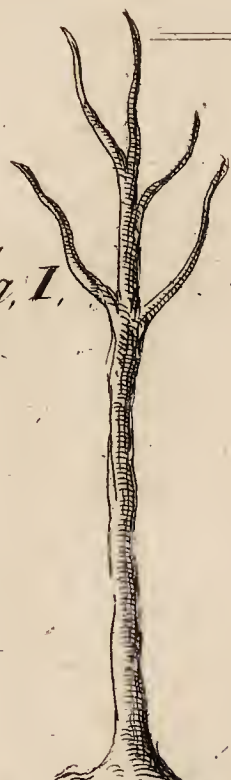


Fig. II.



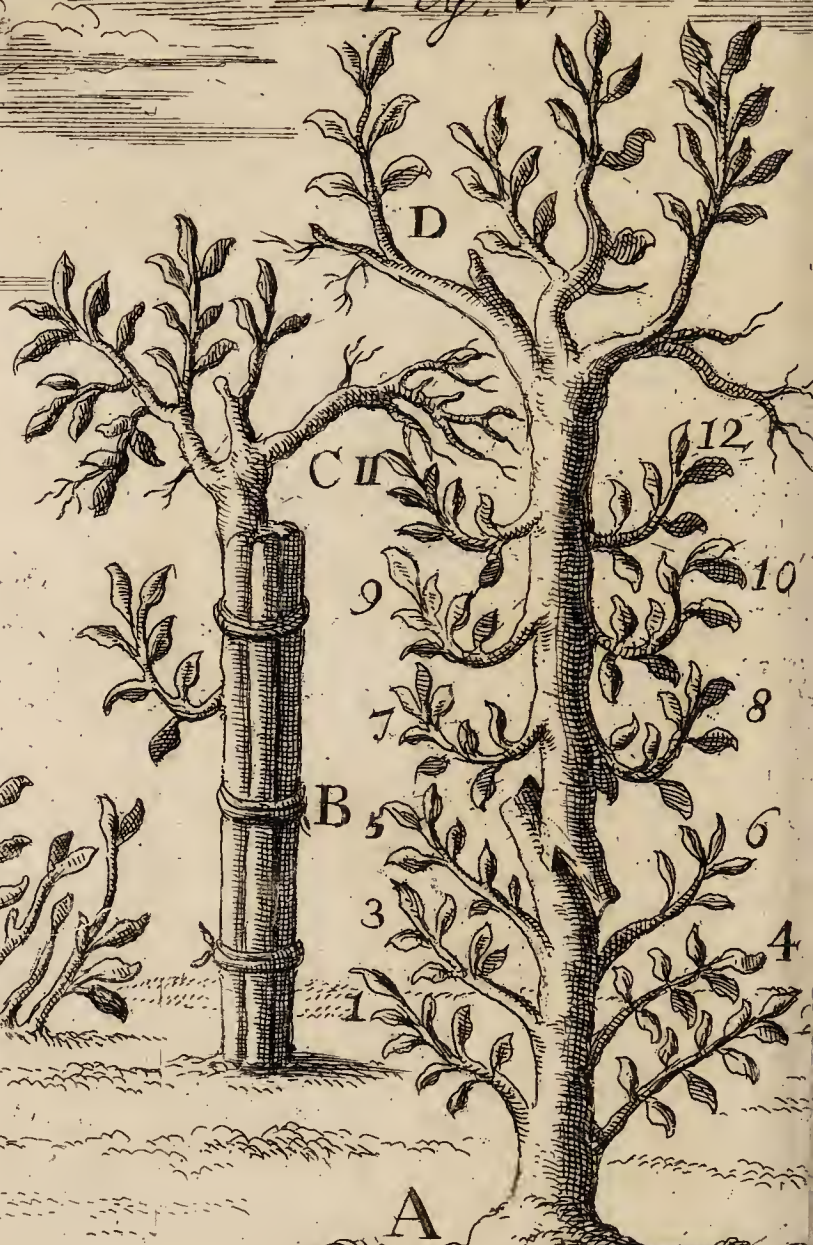
Fig. IV.



Fig. III.



Fig. V.



Mixture warm with a Brush to the pruned Parts.

Take two Ounces of Bees Wax, two Ounces of Tallow, one Ounce of Turpentine, one Ounce of Rozin; melt them together in a Pipkin, and apply the Mixture moderately warm, as directed above.

The Tree being thus dress'd, prune off all the Buds or Shoots that you can find upon the Stem of the Plant, and dress the Wounds with the above Mixture, to prevent any collateral Shootings that might happen, and might thereby render the Stem disagreeable to the Sight. Besides, were the Stems of these revers'd Trees to be suffer'd to shoot collaterally, the original Root, which we now have brought into the Air, will not be so apt to shoot freely.

On the other hand, we must have regard that the new growing Roots of this reversed Plant be well nourish'd; and therefore we must cut away that Part of the Shoot which was the Layer, a little below the Earth, to give the better Nourishment to the Stem and its translating Roots; but when we cut off the Top of this Layer, let the Wound be dress'd with the Mixture before-mention'd.

Fig. I. Is a Vein of the Tree in its natural Growth.

Fig. II. Is the same Tree bent down for laying the Top Branches in the Earth.

Fig. III. Is a View of the same Tree when its original Root is brought into the Air after it is dress'd, and begins to shoot.

When we are come thus far, we may rather expect wild Shoots from the original Roots, than those that would bear Fruit, if we were to serve a grafted Fruit Tree after the same Manner; for the Graff could not communicate in the revers'd Way any more of its Properties, than a Wilding could give to a Graff in this common way of ordering Trees; but it is not impossible to graff the original Roots, which are in the Air, with any Cion of the same Tribe, no more than to do the same Work upon common Shoots of a Tree, as I have experienced.

From the same way of Reasoning, I conclude, that we might inarch two Trees into one another, in such a Manner, that where they had taken good hold of each other, the Root of one of them might be taken out of the Ground, and raised to the Air, so as to make one erect Tree: For Example, if we inlay an Elm into an Elm, as in Figure IV. When they are well join'd, take the Root of one of them out of the Earth, and tye it to a Pole or Stake, as in Fig. V. and I suppose it will have an extraordinary Effect; but I cannot yet determine its Success but by Reason only: But tho' this has never been try'd that I know of, yet I am not so much sway'd by the Carrier's Rule, but that I may find out as good a Path for my Purpose as the common Road.

If this succeeds, as I doubt not but it will, we shall not want Room for Speculation how far the Earth or how much the Air influences a Plant: In Fig. V. from A to B. I suppose, from what I have observed in Nature,
that

that the Shoots 1, 2, 3, 4, 5, 6, will be gradually less than one another : As for Example, 1 the longest and thickest, 2 a size less than 1, 3 a size less than 2, and so on to B, where the two Trees are joyn'd ; for as the Stem from A to B does naturally decline in its Bigness, so it does not possess so many Vessels on the Top as at the Bottom ; and again, the Sap-Vessels near the Root are sooner and better furnish'd, than those that lie more remote from it. But when we come to the joyning of the two Plants at B, and go up gradually to C, we shall find just the Reverse of what we observ'd before ; the Branch 7, I suppose, will be the least, 8 bigger than 7, 9 bigger than 8, and so on to the Part which acted before as a Root ; And again, that all the Branches from B to C will be obliged to turn up to the Air, tho' their Buds were revers'd : And so it is as natural for me to suppose, that the Root D will shoot out Branches and Leaves, as that in Fig. III. which we have already an Instance of in *Holland*. But we shall let alone saying any more of the Use this Experiment will be of in the Gardening Way, till we can show two or three Examples.

After what I have here prescribed, I think it may not be improper to give my Reader the following Letter, which I lately receiv'd from a very curious Person, relating to the Generation of Plants.

To

To Mr. BRADLEY.

S I R,

Octob. 6. 1721.

‘ AS it was your *New Improvements* of
 ‘ Gardening gave me the first Hint of
 ‘ the Generation of Plants, I shall take this
 ‘ Opportunity of acquainting you with the
 ‘ Experiment I have made on that Subject.
 ‘ It is now about two Years since, that I sa-
 ‘ ved a large Piece of Spinage for Seed ; and
 ‘ according to the old Way of Gardening,
 ‘ as soon as the Male Plants began to shew
 ‘ themselves, caused them to be plucked up,
 ‘ in order to give way to the She-Spinage, as
 ‘ the Gardeners call it, that the Seed might
 ‘ ripen better ; not considering that Nature
 ‘ had ordain’d the one to assist the other :
 ‘ Some of my Friends, that saw the Spinage
 ‘ growing, desired me to let them have some,
 ‘ and I promised I would ; and as soon as I
 ‘ thought the Seed to be ripe, caused it to be
 ‘ pluck’d up to dry ; and as it was a pulling
 ‘ up, I found there had been some Male
 ‘ Plants left, which might be sufficient to im-
 ‘ pregnate some of the Female Plants, but
 ‘ not all ; but I never consider’d of this till
 ‘ some Time after, that I sent some Seed to
 ‘ my Friends, who sowed it all, except One,
 ‘ who kept some by him, and sowed some.
 ‘ In a little Time after, I heard a great Com-
 ‘ plaint, that my Spinage Seed did not grow :
 ‘ Some thought that I had impos’d old Seed
 ‘ on them, but I assured them I had not ; but
 ‘ my Friend that kept some Seed by him,
 ‘ when

' when he found that half his Seed did not
 ' grow, told me it had been eat by Mice;
 ' but I assured him it had not; and com-
 ' ing home I search'd that Seed I had
 ' left by me, and found that half of it had
 ' not got the *Punctum Vitæ*, which put me on
 ' Consideration how it should come to pass:
 ' But reading your System on the Generation
 ' of Plants, gave me a clear insight how it
 ' happen'd, it being for want of Male Plants
 ' enough to impregnate and give Life to the
 ' Seed; and since, I have always a Regard to
 ' leave enough of the Male Plants, and have
 ' had good Success.

' This put me on trying Experiments, in
 ' pulling out the *Apices* in Flowers, before
 ' they had cast their Dust; and likewise, I
 ' told some of my Friends of this System,
 ' who would not believe me, but said they
 ' would try as well as I; but to my great
 ' Astonishment we had some Seed ripen'd
 ' very well, having all the good Properties
 ' that it should have, which we sowed, and
 ' it grew very well: Hereupon my Friends
 ' condemn'd me, and said, I had asserted a
 ' meer Fiction, but I desired them to wait
 ' till I had try'd again; and accordingly I
 ' planted a Dozen of Tulips by themselves,
 ' and as soon as they open'd, took out the
 ' *Apices* with a fine Pair of Nippers, lest I
 ' should shake some of the Dust off; and by
 ' my Microscope, I could not discern any
 ' Dust that had been left behind. About
 ' two Days after, as I was sitting in my Gar-
 ' den, I perceiv'd, in a Bed of Tulips near
 ' me, some Bees very busy in the Middle of
 ' the

‘ the Flowers; and viewing of them, I saw
 ‘ them come out with their Legs and Belly
 ‘ loaded with Dust, and one of them flew
 ‘ into a Tulip that I had castrated; upon
 ‘ which I took my Microscope, and examin-
 ‘ ing the Tulip he flew into, found he had
 ‘ left Dust enough to impregnate the Tulip;
 ‘ which, when I told my Friends, they con-
 ‘ cluded that theirs might be served so,
 ‘ and by this Means reconciled them again.
 ‘ But it being probable that some People a-
 ‘ broad may fall into the same Mistake, and
 ‘ so condemn this System, I desire you will
 ‘ publish this; for unless there be Provision
 ‘ made to keep out Insects, Plants may be
 ‘ impregnated by Insects much smaller than
 ‘ Bees; for as the Creator of all Things, in
 ‘ his infinite Wisdom, appointed this Way
 ‘ of Generation to Vegetables, which are
 ‘ incapable of Motion to each other, it may
 ‘ be supposed, that he had so ordain’d it,
 ‘ that a small Part of the Male Dust should
 ‘ be sufficient to perform that Office; which
 ‘ is all at present, from

Yours,

PHILIP MILLER.

This Observation of Insects carrying the
 Male Dust from Flower to Flower, and there-
 by impregnating some that would otherwise
 have never been prolifick, is a Thought entire-
 ly new, and very reasonable; and Mr. *Miller*
 is as right in my Judgment, concerning what
 he relates of the Male Spinage Plants, whose
 Dust Nature surely designs to impregnate the
 Seed in the Female; and therefore 'tis an Er-
 ror to pull them up while there is any Dust
 upon

upon them, or till they have done their Work.

We may observe in the Papers of the preceding Month relating to Bees, that the Farina of the Flowers is gather'd by the Bees to make their Wax of; and it is hardly possible, that they should shift themselves from Flower to Flower, without leaving here and there some of it in their Progress; and tho' in the Flowers which Mr. *Miller* castrated, the Bees could not be invited to them on Account of the Dust for Wax, yet we must consider, that these castrated Flowers were not void of that excellent Dew from whence they extract their Honey; and so they visit all alike, and all may be rendred fecund by their Visits.

I have often thought, that there might be some extraordinary Extract drawn from the Farina of Plants, to help or forward Vegetation; and one Year I had large Quantities of it gather'd from several Kinds of Plants, in order to try Experiments with. From the White Lilly alone, I got about two Pound Weight, and about as much of the Dust of the Yew Tree; about half a Pound of the Dust from the Katkins of the Hasle, and about a Pound of Tulip Dust. My Design was to try them severally in Paste to see what Effect that would have, on the Roots or Seeds of the Plants they come from; also to try what this Dust would do by Infusion, either in the Juice of its original Plant or in Rain Water, or by Decoction or Distillation, or by reducing it to Ashes: But these Experiments were lost, with many more.

just when they were near being brought about ; and I think it may not be unreasonable to imagine, that some Trial or other that I was making with this Dust would have produced an extraordinary Event, considering that every Particle of it contains the sovereign Spirit of Vegetation ; that it is the *Farina fecundans*, that it gives the first Degree or the first Spring of Life to the Seed : I cannot therefore leave my Opinion, that it must be considerably helpful to Vegetation, till we have found the contrary by many Experiments.

The excellent Mr. Godfrey in *Southampton-street*, whose great Skill in Chymistry is acknowledged by the most famous Artists in *Europe*, I hope will make some Experiments upon this vegetable Matter, he having already observ'd to me, that if we take a little of the Dust of the Katkins or Juli of Hazle, and put it into a Tube, and then blow it with the Mouth through the Flame of a Lamp or Candle, it will pass cross a large Room inflam'd ; but this is only one sort of Dust, perhaps the Dust of other Flowers may afford Variety, if we try them this way.

While I am writing this, I consider that both Wax and Honey fully prepared by the Bees, must be of use to the Vegetables ; the Wax to be lay'd to the Roots, or else the Roots to be anointed with Honey, or else both together to be made into a Paste, will promote Vegetation ; for seeing that Bees Wax is made of the enlivening Parts of a Plant, *i. e.* the Male Dust, and the Honey is gather'd from an essential Dew which is
ever

ever found in or about the Female Parts of Flowers, we may reasonably judge how apt these Bodies together or asunder are to help the Growth of Plants, if they are rightly apply'd.

The Application of Honey to the Roots of Plants, will answer one of the Ends which Soap will do, *viz.* to keep the Roots from shrinking by the Air, till the Earth is well settled about them. And I am of Opinion, from what I have said before, that the Plant anointed with it will gain an extraordinary Benefit by it ; for though Honey is taken from the most finish'd Part of a Plant: Yet, as I have been observing before, the extream Parts of the Roots may be made to become Branches, and the extream Branches to act as Roots : So that 'tis likely that Honey may be serviceable to the Roots of a Plant, though it be the Produce of the Extreme Parts of the Branches. And as it certainly is helpful to the perfecting of the Seed, and fills (as I believe) the Lobes of every Seed with nutrimental Juices, for the Substance of the Embrio of a Plant in the Seed ; so, I say, we may suppose that Honey must assist the Growth of a Plant, being applied to the Root.

But before we go too rashly to work, let us consider, whether every sort of Honey will do for our Purpose ; for if the Bees gather it from the Flowers of Heath, or Furze, or Broom, or Pease, or Beans, or from Garden Flowers, the Query is, whether it will be alike useful to every sort of Tree ? And if we should be so nice to examine the Coun-

try about us, what chiefly is in Flower, and judge from thence what sort of Plant the Bees gather their Honey or Wax from ; that Honey, I presume, will be of use chiefly to promote the Vegetation of Plants of the same Kind rather than others ; though I conceive it will be of great help to Plants of any sort, and enrich their Growth, as it depends upon natural Principles of Vegetation, which are generally the same ; but perhaps the Honey gather'd from Tulips would be of the most service to Tulips, that gather'd from Pease to Pease, and so on : But this Honey, however the Plants it was gather'd from were differing from Trees, yet there cannot be any thing in it disagreeable to the Laws of Vegetation ; so I question not but if the Wax made at the Time when either the Oak, the Chesnut, or other Trees were in Flower, or the Honey, if the Bees can gather any from Trees, that Wax or Honey would be sovereign, if we were to enclose the Seeds or Mast of the same Trees in it when we set them in the Ground ; the Wax having in it the Substance of the Male Spirits, which first endued that Seed with the Spirit of Vegetation, the Honey partaking of that Dew found in the Female Flowers, which was essential to the Growth of the Plantula in the Seed. But the next Spring, I hope, will furnish me with some Examples to shew the Success of such an Undertaking ; and I hope my curious Correspondents will not let slip an Opportunity of making some Trials this way at the next proper Season. Some already are preparing to do it in their Hot Beds.

The

The following Letter being an Enquiry concerning Cows, and the Quantity of Milk, &c. which a Cow may give in one Year, it is necessary that I insert it, with Mr. *Waller's* Answer; both one and the other tending to publick Benefit.

To Mr. BRADLEY.

S I R,

Sept. 9. 1721.

IN your Treatise for May, p. 88. there is an Account from Mr. *Waller*, concerning the Profit made by Cows, reckoning Milk at a Penny *per* Quart; it may not be amiss for you at your Leisure, to beg the Favour of that Gentleman to examine his Account, and to state it according to the Quantity of Milk to be produced next Year, and to the Money that a Farmer can make thereof in Butter or Cheese; for there are not Buyers of Milk in the Countrey at a Penny *per* Quart. The Hay or other Fodder, to be eaten by the Cows in the Winter, is not noted in Mr. *Waller's* Account. He reckons three Gallons of Milk *per Diem*, from each Cow, without allowing for the Time wherein they fail of giving so much, or for the Time wherein they go dry. Sir *William Petty* reckons for Ninety Days, a Cow may yield Three Gallons of Milk; and for Ninety more One Gallon; and for Ninety more scarce one Quarter of a Gallon; and for Ninety more
the

‘ she is dry. Thus in a Year, a Cow may
 ‘ yield Three Hundred Eighty Four Gallons
 ‘ of Milk.

‘ The said Quantity of Milk will make
 ‘ Two Hundred and a Half of raw Milk
 ‘ Cheese, and One Hundred of whey Butter,
 ‘ besides Whey for Swine; or else Two Hun-
 ‘ dred of Butter, and One Hundred of Skim
 ‘ Milk Cheese, besides Whey, as abovesaid,
 ‘ for Drink to the People, and Food for
 ‘ Swine.

‘ By this Account, the Profit of a Cow’s
 ‘ Milk in a Year may be about Five Pounds.
 ‘ This being vastly different from Mr. *Wal-*
 ‘ *ler’s*, may be communicated to him.

‘ You may not think it foreign to your
 ‘ Design to peruse Sir *William Petty’s Political*
 ‘ *Anatomy of Ireland*, from p. 51. to p. 57.
 ‘ *Edition 1719*. wherein you will see more
 ‘ Particulars relating to Husbandry: but this
 ‘ relating to Milk you will find at p. 51, 52.

I am, S I R,

Your most humble Servant,

A. B.

Copy of a Letter to Mr. BRADLEY,
R. S. S. from Mr. Waller.

S I R,

‘ UPON the Receipt of your Letter, with
 ‘ one enclosed, signed *A. B.* I find that
 ‘ my Letter to you concerning the Produce
 ‘ of Cows is not approved, or at least not well
 ‘ under-

understood by All; the Gentleman who signs *A. B.* has certainly stated a very proper Question, which I shall partly answer in this Epistle.

Sir *William Petty's* Calculation, from whence he argues, was general and uncertain: When he stated the Case 'twas for a whole Kingdom, and not for a private Farm, as mine is; he means, every Cow in *Ireland*, one with another, may possibly yield so much Milk as Mr. *A. B.* relates; but in a private Farm the Case is very different, and especially in *England*, where the Cows are generally of a larger Strain than those in *Ireland*. In a private Farm, well manag'd, every Cow that begins to abate in her Milk should be sent to Market, and another bought in her room: So that in such a Farm as I speak of, there will be near a constant Quantity of Milk every Day throughout the whole Year; and therefore I reckon Three Gallons of Milk, Wine Measure, from one Cow in one Day, which is no extraordinary Proportion; or if I had said four Gallons of Milk, Wine Measure, from a Cow in a Day, it would not amount to so much as is commonly expected from a Cow in a Day by the Cowherds about *London*, from whom I learnt many Particulars in the Cow-Business, which I shall some Time or other give you an Account of. In the mean time, I shall keep to my Design of answering Mr. *A. B.*'s Letter, as far as my present Leisure will permit. Where a Farmer has rich Pasture for his Cows, and is skilful enough to keep only
such

' such as are young, changing them as they
 ' decline in Milk for others that are deep in
 ' Milk ; where such Care is taken, I say,
 ' 'tis not difficult to prove, that our Cows
 ' will, one Day with another, yield Four
 ' Gallons, Wine Measure, or more than Two
 ' full Gallons *Winchester* Measure ; and then
 ' a Herd of Nine Cows will yield about
 ' 13140 Gallons of Milk in a Year, which is
 ' 1460 Gallons from each Cow, reckoning
 ' by Wine Measure, or somewhat more than
 ' half that Number of Gallons, if we judge
 ' by *Winchester* Measure.

' Again, we must observe that about *Lon-*
 ' *don* the Wine Quart of Milk, if it is pure,
 ' sells for *five Farthings* half the Year, and the
 ' other Six Months it is sold for Three Half
 ' Pence *per Quart*, by the Retailers, where
 ' Lands generally are from Forty to Fifty
 ' Shillings or Three Pounds *per Acre* : These
 ' Prices, I own, exceed the Prices in many
 ' Places in *England*, as I shall shew you in
 ' another Letter ; but as they are now, a
 ' Cow's Milk in a Year, which is about 1460
 ' Gallons Wine Measure, will amount to
 ' 42 *l.* 11 *s.* 8 *d.* which in Nine Cows, comes
 ' to 383 *l.* 5 *s.* 0. *per Annum*.

' But the Cowherds Price for Milk is much
 ' less, not exceeding a Groat a Gallon for the
 ' Six Summer Months, nor Five Pence in
 ' the Winter ; and their Measure is almost
 ' double what the Retailers measure their
 ' Milk by : So that the Farmer only gets a-
 ' bout Ten Pence each Day in Milk from
 ' one Cow, according to the foregoing Cal-
 ' culation ; and then, in a Year, a Cow brings
 ' into

' into the Farm 15 *l.* 14 *s.* 2 *d.* And Nine
 ' Cows at that Rate, 136 *l.* 17 *s.* 6 *d.* by
 ' taking only a medium Quantity of Milk
 ' from each Cow, *i. e.* about Two Gallons
 ' *Winchester Measure per Diem*, at little more
 ' than a Penny the great Quart ; or by the
 ' Wine Measure, not exceeding Four Gallons
 ' *per Diem*, at about a Half-penny, *per Quart*,
 ' which is much the same : But be assured,
 ' that where the Cows in such a Dairy are
 ' regularly changed in the Markets when
 ' their Milk begins to fail, the Quantity of
 ' Milk is about double as much as I have set
 ' down ; which every one may easily guess,
 ' that knows what Quantities of Milk every
 ' deep-milch'd Cow will give at a Meal ;
 ' and in this Case, every Cow is in full Milk.
 ' But however, let the Reckoning stand as it
 ' does, that Nine Cows to the Farmer brings
 ' in a Year, by Milk only, 136 *l.* 17 *s.* 6 *d.*
 ' the Food for these Nine Cows should
 ' not be allowed more than Eighteen Pence
 ' *per Week* each Cow in the Summer,
 ' if we even rent the Grass at the *London*
 ' Rate ; or in Winter, that I may come near-
 ' er Mr. *A. B.*'s Account, Two Shillings *per*
 ' Week for each Cow's Provinder is full e-
 ' nough. Let us see then what the Amount
 ' will be for keeping the Cows, and then
 ' Ballance the Account : For in one of my
 ' former Letters to you, where I mentioned
 ' Cows, I stated the Keeping of one Cow
 ' the Year about, at Eighteen Pence a Week,
 ' but that Rate with us is too much.

‘ The Farmer’s Account for Milk from
 ‘ Nine Cows, as I have rated the Milk, and
 ‘ the Feed of the Cows, will stand thus :

‘ To Six Months Grass for
 ‘ Nine Cows, at One Shilling
 ‘ Six Pence each Cow *per* } 17 10 01
 ‘ Week, being Twenty Six
 ‘ Weeks.

‘ Expence for keeping Nine
 ‘ Cows with *Straw, Hay, Tur-*
 ‘ *neps* and *Grains*, for Six } 18 03 01
 ‘ Months, or Twenty Six
 ‘ Weeks in the hard Months.

‘ Expence for Feeding } 35 13 02
 ‘ the Cows

‘ Receiv’d for 13140 Gal-
 ‘ lons of Milk, Wine Measure,
 ‘ or by *Winchester* Measure, by
 ‘ which I sell it, after the Rate
 ‘ of Four Pence Half-Penny
 ‘ *per* Gallon, or somewhat } 136 17 06
 ‘ more, besides other Profits,
 ‘ when the Milkers have done,
 ‘ the Money for Nine Cows
 ‘ Milk in one Year, as before
 ‘ related,

Received by Milk 136 17 06
 ‘ Expence for Feeding } 35 13 02
 ‘ the Cows

‘ Total { ‘ Neat Profit by
 ‘ Nine Cows in Milk } 101 14 04
 ‘ for one Year

' By this Account we may see, that the
 ' Farmer may get 101 *l.* 14 *s.* 4 *d.* only by
 ' the indifferent Rate of Milk; and this Rate,
 ' if there were no other Advantages in keep-
 ' ing Cows, would amount to above Eleven
 ' Pounds each Cow *per Annum*, or very near
 ' as much again as Sir *William Petty* judges
 ' may be the Produce of a Cow in *Ireland*;
 ' but remember, I say, he calculates for all
 ' the Cows in a Nation, and therefore his
 ' Computation can be no ways agreeable to
 ' private Farming; for where shall all the
 ' Cows of a Nation be changed when they
 ' are low in Milk, for others that are fresh
 ' or deep in Milk? The Cows of all *Ireland*,
 ' which, one with another, are set, for the
 ' first Ninety Days, to yield three Gallons
 ' each; the next ninety Days, scarce one
 ' Gallon; the next ninety Days scarce one
 ' Quarter of a Gallon, and ninety Days more
 ' are dry; I think is a good Calculation in
 ' general for *Ireland*, where the Cows are
 ' smaller than ours. But how can all these
 ' Cows be shifted from one Place to another,
 ' or changed in this dry State for milch Kine,
 ' with the same Advantage I speak of in pri-
 ' vate Farms? And I am perswaded, that
 ' the Profits of raising Kine from Calves, will
 ' hardly make it up; for in general, we are
 ' sure all the Cows in *Britain* can never be in
 ' the same Condition of Milk-bearing at one
 ' Time; for if they were, we must be oblig'd
 ' to want Milk all over the Nation for ninety
 ' Days together; or in Sir *William Petty's*
 ' way, the Cows of a whole Nation are dry
 ' near a fourth Part of their Time. But the

‘ Farmer, who can change his Cattle at his
 ‘ Pleasure, may be rich in Milk constantly.
 ‘ There are Opportunities and Practices of
 ‘ this daily, as you may learn from some
 ‘ Herdsmen about *London*, who keep Four or
 ‘ Five Hundred Cows apiece, and without
 ‘ any Loss at the Year’s End, as some of
 ‘ them have told me; for the Cows, when
 ‘ they are Fat or in good Plight, sell well to
 ‘ the Butcher, and the Food which gives them
 ‘ Quantity of Milk, renders their Flesh of
 ‘ Value for the Market.

‘ So far I shall at present answer Mr. *A.*
 ‘ *B*’s Letter, *viz.* that in a private Farm the
 ‘ Milk of a Cow may yield moderately up-
 ‘ wards of Eleven Pounds *per Annum*, at
 ‘ little more than a Half-penny *per Quart*,
 ‘ Wine Measure. But I have not now leisure
 ‘ to give my Sentiments upon the other Parts,
 ‘ but hope to do it in due Time. If you
 ‘ know the Querist, pray send me Word
 ‘ where I may send to him.

I am, S I R,

Your most humble Servant,

W. WALLER.



*A Method of Meliorating Orange Trees
in England, so as to make them
thrive and bear more profitable Fruit
than has yet ripen'd with us by the
ordinary Practice.*

TH O' we have several very fine Orange-
ries in *England*, which produce abundance of Fruit, yet as that Fruit has not always the Advantage of sufficient Nourishment from the Tree, and the Tree is not without Hazard of being curb'd in its Vigour by Accidents, which often happen in the common way of Practice, it may not be amiss to say something of planting Orange Trees in the natural Ground, as we may observe them now growing in Sir *Nicholas Carew's* Gardens at *Bedington*, in *Surry*, where they always fruit in great Quantity, and bring their Fruit to extraordinary Perfection, without being subject to the Inconveniences which too frequently attend those Trees that are cultivated in Tubs, Pots or Cases ; such as chilling the Roots, frequent occasions of Shifting, want of the necessary Quantity of Water, or having too much of it, while these that are planted in the natural Ground are free in Growth, nor loose their Vigour by shifting, or can be subject to any Inconvenience or Hazard but from the Frost, which may be as well guarded against, as if they were to be set into a Green-House.

There-

Therefore I think what I shall now treat of may be useful not only in *England*, but about *Paris* too, where this sort of Fruit is so high priced, that I have paid two Livres for three imperfect Ones, which were not larger then common Walnuts; they were the Growth of some Orangery of that Province, for the *Parisians* have not commonly the Advantage of receiving this Fruit from *Lisbon*.

At Sir *Nicholas Carew's* I observ'd the Orange Trees grew on the South Side of a Wall, not nailed against it, but at full Liberty to spread: I was told there by the Gardener, that it was said they were growing there in the Reign of Queen *Elizabeth*, and were long before planted in that Place in the natural Ground. The Diameter of the Largest within six Inches of the Ground, is about ten Inches; and by comparing it with the great Tree at *Versailles* the same Year, I found the Tree at *Bedington* was larger in its Stem than that in *France*. Sir *Nicholas Carew's* Tree indeed is in the full Ground, and that which belongs to the King of *France* is in a large Case; and there is likewise this difference, that the Tree at *Bedington* brings large well grown Fruit, and that at *Versailles* had no Fruit upon it when I saw it housed in *October*.

When I was at *Bedington* on purpose to take this View, I observ'd some Orange Trees which had been transplanted from Cases into the Ground near the others, about 3 Years before the Year 1719, when I was there, and those were grown above three times as much as any Tree

Tree I ever saw grow in a Pot or Case in that Proportion of Time ; as I judge from a Plant the Gardener shew'd me, which he said was of the same Term of Growth with the rest, but was then a small Tree in Comparison with those in the natural Ground.

The Conservatory for these Plants in the Winter, is a kind of Frame, which may be taken to pieces, and, I suppose, carried quite away in the Summer, or at least might be made so, and with great Ease put together again when the Winter began ; the Expence of taking down and putting up such a regular Frame as I mean, would not be equal to the Expence of Cases or Pots, or even of the extraordinary Attendance the Trees would require if they were to grow in Pots ; and much less expensive would be a Frame of such a manner than some Green-houses : Besides, as the Management of Orange Trees in Tubs or Cases is almost as different as the Minds of the Gardeners who cultivate them ; so if there should happen an occasion of changing a Gardener, the Plants in the natural Ground would not be subject to suffer by a different Treatment ; but those Orange Trees which are cultivated in Tubs, are too frequently spoiled by the different Practice of different Men, as well indeed as most other Things in a Garden ; so that it is to be wish'd a Gardener might be constant in one Business.

If we have a mind to cultivate Orange Trees in the natural Ground, we may as well plant them in Walks, or in the Parterre as any other Tree, only providing Coverings for them of Thatch, and four Pannels of double

double straw Mattresses, or such Materials to be fix'd to a Frame, as may keep their Roots and Shoots from the Frost in Winter: for in some Parts of *Italy* and *France*, where the Frosts are more severe for the Time they last, than they are in *England*, such Coverings or Shelters as I mention are us'd with Success, opening them now and then when the Sun shines, and when there is no Danger of the Frosts hurting their Roots. And we may be assured of this, that the Trees planted in the natural Ground, will not so soon feel the Frost, as those in Tubs and Cases; and an Orange Tree will certainly, in this Case, do well, if we only keep it from the Frost.

While I am upon this Head, I cannot help taking Notice of a very ingenious Contrivance for helping decay'd Orange Trees, of Mr. *Phillip Miller*, Gardener in *Kent Street Southwark*, who in Conversation acquainted me with that and several other curious Discoveries he had made, which in some other Place I shall mention for publick Benefit. His Way of restoring decay'd Orange Trees, will add to our present Delight in cultivating them, and also afford us some Proofs of the Advantages which those Plants receive, when they draw their Nourishment from a large Fund of Earth; which will appear to be much superior to that which Trees can receive, when they are under the Confinement of a Pot or Case.

Mr. *Miller* tells me, that some Orange Trees were once so disfigured by ill Management, that they were judged by some unlearned Persons to be of little or no Value; but that he

he observed in them such a promising Aspect, that he reasonably concluded tho' they had then none of the most gay Appearance, they had Virtue enough in them to be improved and become valuable with a little Assistance; to this End, he thought it necessary to consult their natural Mode of Growth, and treat them, if possible, in their own Way, as well with regard to Degree of Heat, as necessary Liberty; for the first he prescribed a Glass Case well exposed, in which he directed a hot Bed of Tanners Bark, such as I have mention'd under the Head of the Ananas, as order'd at *Richmond* by Mr. *Telende*; and that the Trees might want nothing contributory to their Nourishment, prun'd their Heads, wash'd and examin'd their Roots, and laid them in Water for a convenient Time, to make good the Loss they had sustain'd. When this was done he planted them in Baskets of proper Earth, and fill'd up the Divisions between them with the same Soil, which was a sure Way of giving the Roots due Liberty of searching for their Nourishment; for the Baskets would admit of a close Communication of the Roots with the Body of Earth, which was laid between them, and that Earth had no nourishing Quality in it that the Roots could not draw thorough the Baskets; the Consequence was, the Trees for the most part made Shoots of two Foot, and some near three Foot long the same Summer, and produced Blossoms. I had once a Tryal of the same kind, excepting only that my Plants were in Pots and these were in Baskets; but I confess, though mine grew well, yet they were not so vigorous as Mr.

Miller's, for I suppose my Trees wanted that Fund of Nourishment which gave the Trees, he mentions, their Excellence of Shoot ; but besides this Advantage to the Trees, the Baskets they are planted in, if they are strong, will prevent any Check at the time of moving such Trees to another Place, when otherwise they must have been baulk'd in their Health and Vigour.

Some Conjectures concerning the Improvement of Vegetation, by the Eggs of Fowls or Birds.

CONSIDERING how much the Flesh, Blood, and other Parts of Animals contribute to the Vegetation of Plants, and that Bodies of a viscous Quality are found to be of Use to many Kinds of Vegetables, as well at the time of transplanting them, as when they are decaying or in low Health ; I therefore conceive that whatever Part of an Animal is the most viscous in its Quality, must have an Excellence in it above the rest for our Purpose ; and that a Substance of this Nature, where it is purely simple, must be be preferable to all mixt viscous Bodies.

In some of my former Treatises, I have have given some Examples of the assisting the Growth of Plants, by laying the Flesh of Animals to their Roots ; and have also mentioned the use of Soap, a compound viscous Body, to do good Service to some Particulars : I have
like-

likewise endeavour'd to show the Analogy which there is between Plants and Animals; but have in those Accounts slip't in some Thoughts which may upon this Occasion be necessary to observe, *viz.* That Birds and Fowls of all Kinds seem to have a greater Harmony with Plants than any of the four-footed Creatures, the Eggs of Fowles being excluded from their Bodies to be afterwards inoculated and hatcht into a Likeness of their original Like.

The Seeds of Plants, which are discharged from the Mother Plant, to be afterwards brought into Figure by being hatcht in the Earth. But Quadrupedes or fourfooted Beasts, for the most part, bring their young Ones perfect into the World.

Again Fowls are cloathed with Feathers, as Plants are with Leaves, and every Feather is in many Respects agreeable to the Leaves of Trees; these Feathers have their Roots by which they are join'd with the main Body and Branches, and have their Ribbs and Ramifications like the Leaves of Plants, and like Leaves annually fall and are renewed. Add to this, that the chief Food for the Nourishment of Fowls, is from the Seeds or Grains of Plants; and on the other Hand, it may be that Plants may be as well assisted in their Growth by the Flesh, Feathers, or other Parts of Birds.

After this we come next to consider the Eggs of Fowls, which contain a large Quantity of that viscous Matter which is call'd the White, and would in due time by gentle Heat be changed into Parts of the Fowl.

Now since there is so great an Harmony as we observe between Fowls and Plants, I see no Reason but the White of an Egg must be the most helpful viscous Matter to forward the Growth of Seeds and Plants; and I think would be worth our Tryal. What Success this Experiment may meet with, I desire may be made known to me by the Curious, who enquire into it, that my own may be compared with theirs, and given to the Publick; if the Design proves to be advantageous, or at least if it should not answer so fully as we could wish, we may fall into some other Tryals, for by Accident comes the greatest Discoveries.

Concerning Clover, and the Method of gathering the Seed.

THE Husbandry of Clover has proved of great Advantage to several Parts of *England*, but is not yet so generally known as to be cultivated every where: We have many Lands now in *England*, which might be greatly improved by it, and I shall therefore be a little peculiar upon the manner of its Cultivation.

We are first to understand, that Clover has been for many Years cultivated in *Flanders*, and has been but a few Years brought into *England*; therefore it will not be necessary to acquaint my Reader, that the *Flanders* Soil, where this Herb is chiefly propagated, is sandy light Earth, for the most part, such as our Heath Ground in *England*, and there it thrives
very

very well, and returns more Money to the Farmer than Three or Four times the same Quantity of Land will bring by common Grass.

It is of great Use for feeding Cattle, either in the green Herb or in Hay, and may be sown simply, or with Oats, Barley or Rye-Grass, and either of these Ways turns to extraordinary Account. The Seed alone brings considerable Profit; but at present in *England*, I find the Art of threshing the Seed and cleaning it, is so little understood, that we are forced to send to *Flanders* for the greatest Part of what we use, and are very often deceived by it, as that is generally mixt with old, and does not bring half a Crop.

'Tis therefore I shall begin with the gathering and threshing out the Seed, that we may be at a greater Certainty in our Husbandry of this Herb, and have the Benefit of it in our selves, without being obliged to a foreign Nation, who may one time or other perhaps find an Occasion to quarrel with us; for surely if private Friendship is not always lasting, publick Friendships are much less so, as they depend upon the Minds of many Men, which naturally must be subject to change; and I think it is not against the Interest of my Country, if I endeavour to promote the Culture of every thing among our selves, which at present we must go abroad for. The State of Timber is now very low in *England*; and it is observable, that our Plantations abroad have furnish'd us very notably with Vessels built there, and even Timber has
been

been brought from thence to us for Ship-building ; but would the Art of Ship-building have been known there, if we had had sufficient Materials of our own to have built Ships? The Neglect of some of our Ancestors has, I fear, rous'd the Minds of other Nations to change their sleeping Strength into lively Force. In a Letter which I have lately receiv'd, a Gentleman observes, that the natural Genius of our Nation, and the natural Productions of our Country, are each of them extraordinary enough to set us above all other People in the World. In this Strength says he, (very merrily) we indulge our selves ; till we become indolent enough to forget, that our Store is not for ever lasting, or that there are People abroad, who know how to envy our Liberty and Property, and turn our Neglect to their Advantage. The same Gentleman observes likewise, that we cannot be too industrious in providing our Country with such Things, while we are at Peace with other Nations, as we might not be able to compass in Time of War ; and above all, such as are useful to our Navy, the invincible Walls of *Britain*. The planting of Firr Trees he recommends as useful and necessary to the Publick, and profitable to the Planter. In the North Parts of *Britain* there are now Firrs fit for Masts of the tallest Ships ; and the pitch Firr should not be neglected, tho' we are happy in a Soil about *Staffordshire*, which yields excellent Pitch. He adds likewise, that we have waste Grounds enough to afford a sufficient Quantity of Hemp for our Use, and Flax might as well be cultivated
with

with us as in foreign Countries ; but especially, says he, let us no longer delay to make a Provision for Oaks, for though they are a little tedious in their Growth, we ought to have so much regard for our Successors, that they may not want, or be provoked to curse their Ancestors for Neglect. But let us now return to the Point in Hand, viz. the saving the Seed of Clover in *England*, rather than depend upon other Nations for it.

One of my Correspondents, who signs himself *J. Hagan*, tells me, that in *England* an expert Man can only thrash about Half a Peck of Clover Seed, or at most a Peck in a Day, for want of the Art which they have in *Flanders* ; where Twenty Five and Thirty Pecks of Seed are easily clean'd in a Day by one Man. In *Flanders*, I have seen Two or Three ways of doing it by Engines, after the Heads of Seeds are thrash'd off with common Flails ; the Engine which I best remember, has an Hopper at the Upper End of a Trough, so that the Heads of Seed fall continually from the Hopper into the Trough. The said Trough is about six Foot long and about two Foot and a half over, and lies slope-wise from the Hopper, which is at the higher End, so as to drop at the other End about a Foot : The Bottom of this Trough, within Side, is made rough by Chissels, and upon that is a broad Board made to draw backwards and forwards, which is cut in a rough manner, like the Inside of the Bottom of the Trough. When the Heads of Seed fall into the Trough at the Upper End, the broad Board in its Motion draws them through the
Trough,

Trough, and thereby breaks or opens the Seed Vessels, so that the Chaff and the Seed run out of the lower End ready for Winnowing : This Motion is maintain'd by a Water Wheel and a Crank, and answers very well the Purpose it is design'd for. I have seen an Engine of this Kind, where the Bottom of the Trough was an Hurdle, more finely wrought than our common Hurdles ; and the sliding Part, which I call the broad Board, was an Hurdle of the same Make. In this I found, that most of the pure Seed fell through the lower Hurdle, and little more than Chaff was discharged by the lower End of the Trough, and consequently must give less Trouble in the Winnowing or Cleaning from the Chaff.

I have seen also another kind of Mill or Engine for this purpose, which somewhat resembles the Mill which Tanners use to grind their Bark. In the former, I should have mention'd, that there is commonly a Weight lay'd upon the upper Hurdle or broad Board, the better to break the Heads of Seeds that pass between that and the Bottom of the Trough.

When we are thus provided with the Seed, we are to choose our Ground ; and from Experience we find, that such as our common Heath Land is very proper for it ; *that is*, the Seed will grow well there without much Manure, and bring the Farmer Profit where he has had the least Expectations ; 'tis in short, the afforting the proper Plant to the proper Soil which agrees with the Husbandry I endeavour to promote ; and of which we have

have many Instances ; but tho' this Soil is good for Clover, there are others that are light and sandy or gravelly, or tending towards Loam, which will produce it in good Crops ; but the last kind of Soil will bear other Things, and therefore we shall chiefly treat of the Heath Grounds, how they may be improv'd by it.

When therefore we have a Parcel of Heath Land before us, the Heath Turff must be first turn'd off and lay'd in Heaps, to be burnt for the Manure of the same Spot it was taken from : but a common Plough is not proper to do this ; for in tall Heath, Horses cannot, without great Trouble, draw a Plough ; therefore it must be such a Plough as is not drawn with any Cattle.

About a Year ago some *Italians* brought over a Plough, which they gave us for a new Invention for labouring of Ground, without the use of Horses or any Cattle, and would turn up Land about four or five Inches deep in the Place which they made a Shew of it, that was, near the old Mulbery Garden behind *Buckingham House* ; but it was easily discover'd that their Plough would not be of Service to turn up a Furrow, or work deep enough in stiff clay Grounds for Corn. I could not, however, help admiring the Invention, because one Man could work it in the tender Earth of the Garden they plough'd in ; but afterwards mentioning this Rarity to Mr. *William Keys*, of *Tutbill-fields*, he assured me it was the very same with the Breast Plough, which is commonly used in *Worcestershire*, *Glocestershire*, and some parts of

Staffordshire. His Account of it was, that in the Counties in *England*, which he had named, it was call'd a *Breast Plough*, and was push'd along by two Men, in such Grounds where Horses or common Ploughs cannot go; the Use of it, says he, is to open or turn up the Turf in those Lands that are Heathy, Rushy, or incumber'd with Brakes, Fern, Gors, Whins or Furz, in order to burn or *Devonshire* the Land. But this Plough, as himself and some others observes, is never us'd to plough for Corn, because it does not enter the Ground deep enough.

However, for our present purpose, this Breast Plough is convenient; 'twill open our Land for other ploughing, and the Turf which it turns up must be lay'd in Heaps, to the Proportion of one Hill upon every Rod of Ground, or such a Parcel of Land as is sixteen Foot and half Square; we are then to burn these Heaps, and after a few Days spread their Ashes over the Land, in order to be plough'd in.

The Husbandmen in *Devonshire*, when they have reduc'd these Heaps of Turf to Ashes, add to every Hill about a Peck of unslack'd Lime, which they cover over with the Ashes, letting those Hills remain till the Rains fall upon them, and open the Parts of the Lime; after which they mix their Ashes and Lime together, and spread it over the Land. For ploughing in this and the former Case, be it which it will, the Ground should not be turn'd up above four Inches deep, lest the Ashes alone, or the Mixture of Lime and Ashes, shou'd be bury'd beyond the reach of the

the Roots of the Clover, which does not strike its Fibres very deep ; and therefore it may be the Breast Plough may go deep enough for this Purpose, but I believe will save little Expence.

In the ploughing for this Seed we must lay our Land as level as possible, and sow the Seed soon after the Plough, harrowing it with Bushes that are press'd with a convenient Weight ; and as a light Land is chiefly desired for this Seed, we should contrive to plough and sow the Land soon after Rain.

The Seed Time or Season for sowing this Seed is about *March* or *April* ; and if we sow it simple or without other Grain, an Acre will take up about Ten or Twelve Pounds of Seed, for the Seed is small ; but if we sow it in Partnership with Barley, Oats or Rye-Grass, which last they call *Ever* or Everlasting Grass in the West of *England*, then about half the Quantity is enough.

I have observ'd, that when it has been sown with Barley, the Crop of Barley was very good, and there has been a good Crop of Clover mow'n the same Year after the reaping of the Barley, and after that a plentiful Graze for Cattle in the Winter. The Clover Plants in this Case grow strong and vigorous ; for when the Barley is ripe, the Roots of the Barley draw no more Nourishment from the Clover, but decay, and rather assist it.

On the other Hand ; where it is sown with the Grass call'd *Ever*, it does not grow by Three Parts in Four so strong as when it is sown with Barley or Oats ; because the

Ever-Grafs is continually entangling its Roots with it, and voiding the Earth of its nourishing Faculty, so that the Clover gets its Nourishment with Difficulty, and it's very likely has not above a fourth Part of the Food that it requires.

If we make this Clover a Crop of it self, we find it more luxuriant than in either of the former Cases; and it may then be cut three Times in a Year, and leave a rich Grafs for Winter to feed Cattle. We may judge of the right Time for cutting it, by examining when it begins to knot, and then we may surely go about the Work.

Clover is a Plant which will blossom and bring ripe Seed the very Year of sowing; but when we have a mind to save Seed from it, we must cut our first Crop in *June*, as I have said, as soon as the Clover begins to knot or joint, and the Crop following must be left for Seed, because then our Field of Clover will, by means of the Cutting, branch into more Seed-bearing Parts than it had before the Cutting, and consequently will bring a greater Quantity of Seed. And again we must observe, that the Year which we design our Clover for Seed, we can only cut it twice, because of the Time the Seed takes to ripen, or else we may expect three Crops from one Piece of Ground, as I said before, which makes excellent Hay. When we save Clover for Seed, we must remember to let it stand till the Seed is full ripe, and thrash off the Heads to be open'd by the Mill I have mention'd. An Acre will commonly afford five Bushels of clean Seed.

It is related, that the long Stalks which remain after thrashing, are nourishing Food for Cattle; and even when they grow dry and hard, we may boil them, and they will make good Mash, which will be profitable to Hogs.

This Herb is not long before it springs, though it be close cut; and when the last Cutting, every Summer, either for Hay or Seed is over, we may turn in Cattle upon it, lest it grow too rank to bear the Winter. It has been observ'd by some, that one Acre of Clover well manag'd, will feed as many Cows as six Acres of common Grass, and make the Milk much richer, besides keeping the Cows deep in Milk; or, in other Terms, making the Cows give more Milk at a Meal than common Grass.

But where this Clover is not common enough to afford us sufficient Pasture for our Cows in the Winter, we may partly make amends for the want of it, by feeding them with Grains which are left of the Brewing of Malt and good Barley Straw. This Food, if it is given them discreetly, makes them yield a great deal of Milk of good Quality; but especially I observe, the Barley or Oat Straw, which is mix'd with Clover, is preferable to any Straw which has not Clover with it. This Mixture adds greatly to the Benefit of the Cattle that feed upon it.

A Field of Clover will last in good Strength about Five or Six Years, according as the Soil is more or less agreeable to it. And when we find it begins to decay, I am told, that being plough'd up, it will yield good Wheat
for

for two or three Years, and after that a good Crop of Oats, without any Manure ; for Clover meliorates the Ground for Corn, or at least does not draw any Nourishment from the Ground, which is necessary for the good Growth of Corn ; it is held rather to be a Manure for Corn, and that its Parts which become rotten in the Ground by ploughing, yield such Salts as are of Service to the Vegetation of it, but of Wheat especially.

Some tell us, that after we have had Corn two or three Years upon a Clover Ground that has been broken up, and have the fourth Year sown that Ground with Oats, that we may, when the Oats are just come up, sow the same Ground again with Clover Seed ; and that when the Oats are cut, we shall find a good Crop of Clover at the Bottom ; and at this Sowing there is no need of covering the Clover Seed, for it is so ready for Vegetation, that it will find its way into the Ground, as we may observe in many other Seeds of the like Nature, which will bury themselves in the Earth they are lay'd upon without help. Upon this new Clover we may begin to graze our Cattle soon after the Oats are off, and so continue till the following Spring, when we must fence it for mowing ; and that Summer we may expect three Crops, as we had in the Years before mention'd.

While I am writing this, a Gentleman has brought me a *Memorandum* Book, wherein are collected many curious Observations concerning Clover, which may be instructive to my Reader.

The

The first is an Account of the Profit made by Glover Grass upon a small Quantity of Ground.

The Ground which was planted did not much exceed two Acres, and the Quantity of Seed upon each Acre did not exceed fifteen Pound Weight; the whole Expence of preparing and sowing this piece of Ground amounted to about five Pounds, which was over-paid by the same Summer's Crop of Barley. The following Year, about the End of *May*, the Clover was mowed, and amounted to two Loads, for which five Pounds was refused.

The next Crop stood for Seed, which was ripe the *August* following, and was then cut, and produced three great Loads, which were computed worth nine Pounds as the Year went; out of this mowing was gain'd three Hundred Pound Weight of Seed, some of which was sold for Sixteen Pence *per* Pound; the whole Profit of that Year amounted to thirty Pounds, besides the After-Pasture.

The next Observation is of forty Pounds of Clover Seed that was sown upon four Acres of Land, which brought at twice mowing, twelve Loads of Hay and twenty Bushels of Seed; that is, three Loads of Hay upon an Acre and five Bushels of Seed. The first Crop was mowed on the 19th of *May*, and was valued at twice as much as common Grass made into Hay, and the After-Pasture yielded as much Food for Cattle as three times the Quantity of Ground with common Grass would afford. The whole Amount of these four Acres of Clover in one
Year,

Year, was upwards of fourscore Pounds.

The third Observation is of Clover Seed, sown thin with common *English* Hay Dust upon bare Rubbish Earth, which the *April* following thoroughly cover'd the Ground, and brought a full fresh Bite of very rich green Sward. This Clover Seed was saved in *England* from a neighbouring Ground, where the Clover had been cut twice in one Year, at both which Cuttings there was ripe Seed; the second Cutting was observ'd to bring more and better Seed than the first. It is likewise remark'd, that the saved here from the *Dutch* seedling Plants, thrives better with us than the *Dutch* Seed.

Fourth Observation is of *Dutch* Clover Seed, that was sown with Hay Seed in a Garden, and of the same Seed sown with Barley in a Ground adjoyning, which was a red, sandy Soil. The Seed which was sow'n with Hay Dust was better swarded the first Year, than that which was sown with Barley. But in this *Memorandum* it is remark'd, that Clover does much better to be sown alone, than with any other Seed or Grain.

Fifth Observation. Oats are the best Corn to be sown with Clover about the Middle of *April*; about three Bushel of Oats to an Acre, will be enough to yield a middle Crop. These Oats will shade the Clover in the great Heats, and leave the Clover at the Time of Mowing about Three Inches high, which will afford an excellent Pasture in *September* or *October* following.

Sixth Experiment. Six Acres of Clover, by cutting and feeding Cattle in Racks, from
the

the Middle of *April* to the Middle of *October* next following, maintain'd thirteen Cows, ten Oxen, three Horses and twenty six Hogs ; which, after the Rate of One Shilling *per* Week for each of the Kine and Horses, and Two Pence *per* Week for each Hog, comes to upwards of Thirty Shillings *per* Week, or Forty Pound for the Twenty Six Weeks. The Summer Profit then of every Acre amounts to about Six Pounds, Thirteen Shillings and Four Pence, besides the latter Masts or Winter Grass, which in Clover Ground is judged to afford as much Food for Cattle in every Acre, as Six Acres of Common Grass would do ; so that in the Six Acres we mention, we might feed as many Cattle in the Winter as Thirty Six Acres of common Grass would feed.

Memorandum 7. It is observable, that where Clover Seed has been gather'd from one Piece of Ground to the Quantity of four or five Bushels, and has been distributed among several Hands, it has failed coming up in many Places, though in others it has grown very well ; which has given a Mistrust to those who did not succeed in their Seminary, that they had old Seed ; or to some more curious, that it was not grain'd or enliven'd by the *Farina Fecundans*, which I have, with others, mention'd to be the Impregnator of the Seed. But I rather think the Fault might happen by sowing the Seed too deep in the Ground, or in surly stiff Ground, where the Seed could not make its Way : For the Seed of Clover, as it is

small and tender, will not bear deep ploughing or deep covering, but covets light Land, a shallow ploughing, and very little covering, not above half an Inch deep at most.

Eighth Observation. That Grounds sown with Clover will nearly treble the Rent of the Land, or an Acre so order'd will yield to the Owner about five Pounds more than other moderate Lands cultivated with common Grass; but if it be continually cut or mown, as the Clover springs or rises, it will grow weak and be impoverish'd; but to graze it we shall reap vast Advantage; it springs before other Grass, and eight Sheep may be kept upon an Acre, which is near as much more as an Acre of the best Marsh Land will bear; this Pasturing of Clover rather improves than impairs it.

It remains only that I should give my Reader an Account of the several Sorts of useful Clover which we have in *England*; but I shall reserve that till another Opportunity, where I design to add as well the Figure of each Kind, in its Leaf, Flower and Manner of Growth, as of the Seed which every Sort produces; which were I to joyn with this Discourse would swell this Month's Remarks beyond their usual Measure. The Clover I have mention'd in this Treatise is the great Clover, which was first brought to us, and still is imported by some People in Seed from *Flanders*; which is enough to the Husbandman, till I come to be more particular in my Description of the several Sorts.

N. B. Tho' I have carry'd on the Phrase in Husbandry, of mentioning this Herb as a Grass, it was merely for the better Information of our *English* Husbandmen, who will not easily part with an old Custom, or with less Difficulty receive a new one; they call it Clover Grass, and will have it Grass, because their Predecessors call'd it so before them; but there is no disputing an old Custom with these People, without running more Hazards than it's worth: I only mention this to our Criticks in Botany, who might censure me for treating it in some Parts of this Discourse as a Grass or Gramen.



*Remarks upon the Weather and Produce
of this Month.*

THE Wind for the greatest Part of this Month was Westerly, and the Weather generally fair in the Day time, but frequent Rains in the Night; towards the End we had pinching Frosts, which discharged the Trees of their Leaves.

I observ'd, that one Night the Frost was so very smart, that a large Mulberry in about six Hours drop'd all its Leaves, without changing their Colour; and though the succeeding Frosts were sharp, yet the fallen Mulberry Leaves remained perfectly green above a Week. I take notice of this, because I do not know any other Tree that sheds its Leaves so suddenly, or that has not its Leaves discolour'd before they fall.

Mr. Lemery very justly observes, that the Mulberry is not only one of the latest Trees that opens its Buds in the Spring, but that contrary to other Trees, the Buds open all together in every Part of the Tree; the Sap of the Mulberry is very resinous, which I think is the reason why it is late in the Spring before it makes its Shoots, and likewise why its Leaves did not change their Colour before they fell; a very small Share of Cold will fix its Juices, and a greater Share of Heat than other Trees requires is necessary to put this resinous Sap in Motion.

The

The same Frost scorch'd and dry'd the Leaves of all the Sorts of *Fronteniac* Grapes, but the other Sorts did not suffer.

Cucumbers lasted till the End, and such as were against Walls, and had run up Trees, had very fair Fruit.

Colly-flowers were very plentiful, and there were some very good Artichokes in the *London* Markets.

We had Kidney Beans to the End, and in two Gardens I saw some very good Pease.

The Fruits were Pears, Grapes, Apples, Peaches, Wallnuts, Pomegranates, and some Pine Apples at *Richmond*; in some Gardens I still observ'd some Morello Cherries.

Brocoli is now very good.

About the Beginning, Mulberries were yet good, and a Gentleman in *Wiltshire* gathered some ripe Strawberries of the white Wood kind.

The End of the Month of October.



A GENERAL
T R E A T I S E
O F

Husbandry and Gardening,

For the Month of *November.*

C O N T A I N I N G

Such Observations and Experiments as
are New and Useful for the Improve-
ment of Land.

W I T H

An Account of such extraordinary In-
ventions, and natural Productions, as
may help the Ingenious in their Stu-
dies, and promote universal Learning.

*To be continu'd Monthly, with Variety of
curious C U T T S.*

*By R. BRADLEY, Fellow of the
Royal Society.*

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Pater-Noster-Row.

(Price One Shilling.)

TESTES

TO

THE COURT OF CHANCERY

IN THE COUNTY OF MIDDLESEX

IN THE MATTER OF

THE ESTATE OF

THE

PLAINTIFFS

VS

THE DEFENDANTS

AND

THE PLAINTIFFS

VS

THE DEFENDANTS



To the Reverend

Mr. *LAWRENCE*,

THIS

TREATISE

OF

Husbandry and Gardening,

For the Month of *November,*

Is, with the greatest Respect,

Inscrib'd by

His most Obliged

Humble Servant,

R. Bradley.

THE

OF THE

MR. LAWRENCE

THIS

TREASURY

OF

PROPERTY AND

THE MONTH OF

TO THE

OF

THE

THE

R. Bradley



A GENERAL
TREATISE
OF
Husbandry and Gardening,

For the Month of *November.*



S most Plants in this Month have with us naturally finish'd their Growth for the Year, I shall treat of some artificial Means which are us'd by the most skilful Gardeners, to supply, in some Measure, the Defect of the Season, or to preserve as much as possible the Remembrance of the Spring. At this Season, every Gardener may be truly said to be an Artist, who can push Nature a little forward in her Progress, and imitate with good Judgment the Degree of Heat which naturally attends the Spring. Such Attempts, where they succeed, command the

Admiration of the best Judge, and even conquer the most obstinate Opinion.

In the Works I have publish'd, I have dropt many Hints this Way, among the plain Methods of Practice: The last were so well taken, that a Gardener, who serv'd me, did not scruple to call 'em his own Inventions as soon as he had left me; but for the first, such as bringing some Fruits and Flowers a little forwarder than ordinary, and some other Things out of his Road, he generously left me the Title to 'em as Impossibilities; and his Ingenuity was so great, that tho' I receiv'd him first as a Labourer, yet in less than two Years time he own'd that he knew much more of Gardening than any one could understand: But this by the by to him and his Associates. I find some who have Understanding and Courage enough to engage with Difficulties, and have already made such a Progress in their Undertakings, as will undoubtedly in the End pay them well for the Trouble they have been at; for my Notion of Gardening is, that it is a pleasant and profitable Study, more depending upon the Labour of the Brain than of the Body; its End is Gain, and that Gain, among a Number of Men of the same Profession, rather arises from new Inventions or Variety of Practice, than where every one follows the same Mode of Culture to propagate the same Things at the same Seasons; for then either the Markets are overstock'd and the Goods undervalued, or else the Glut of one sort of Thing sinks the Appetite of the People, and there are few or no Buyers: But
where

where any thing extraordinary happens to appear, either in the Markets, or in Gentlemen's Gardens, the Success is quite the contrary ; for it is the Interest of the Markets to find Money for Curiosities of this Nature, and the Disposition of a Gentleman to encourage an Artist that has excell'd in the Way of his Profession; so that I think it is not only for the Honour, but for the Interest of every Gardener, to improve his Art as much as he can.

Among the extraordinary Tryals that are now on Foot, there is one which I recommended some Time ago in my *New Improvements*, concerning the raising Cucumber Plants in the *Autumn* to bring Fruit about *Christmas*, and in *January* ; and it is with great Pleasure I observe the promising Appearance of good Fruit at the desired Season, by the excellent Skill and Management of Mr. *Thomas Fowler*, Gardener to Sir *Nathaniel Gould* at *Stoke Newington*, who is the first I have heard of that has had Courage enough to attempt the raising of Cucumbers in this Way, since I made the Experiment of it. The Tryal indeed which I made of it, was only to know the Success ; but in his Undertaking I find many new Contrivances, that I believe were never thought on by any Body ; and which are so agreeable to the Design, that about the End of this Month, he shew'd me Cucumber Vines every way possessing Health and Vigour, the Runners strong and lively, blossoming in good Order, with a good Appearance of Fruit, four of which were already set, and promise the Perfection

we

we desire, about the Middle of *December*, if I may be allow'd to guess at their Progress in such a Season, when we can only expect dark Weather: And I conceive, that if in *December* we happen to enter into a settled Frost, he will not fail of such a Quantity of Fruit as will reward his Deserts, and give him that Honour due to his Merit, among those who know the Value of an extraordinary Performance.

In his Progress with regard to Cucumbers, he has been so cautious, that he did not give them any artificial Warmth, till Nature in our Climate could not protect them; and then he began with those gentle Heats as were necessary to help Nature, rather than force it forward beyond its usual Pace, which in my Judgment is the surest Way to end well in every Undertaking.

During the Time Mr. *Fowler* employ'd himself in this Design, he proceeded with that Caution which was necessary to be observ'd in every new Undertaking; he did not content himself with sowing the Seed at one Time only, as I did when the Experiment was first try'd, but has now Plants of all Degrees that one could wish for from the Time he first began his Seminary, and so consequently he can hardly fail of good Success; for if one Growth is lost, some other may stand and support themselves in better Strength than any that are rais'd in the colder Seasons; for those which are just springing from the Seed in the sharp Months, are so tender, that the frosty Completion of the Weather must destroy them, or at least make them run great Hazards.

And

And to obviate some of the Difficulties that might happen from Uncertainties of Heat in the common hot Beds, it is necessary to mention the Method which Mr. *Fowler* uses for guarding or coating the Sides of his Bed with *Sand* about two Foot thick; which does not only prevent the Alterations of external Air from operating upon his Bed, and rendring its Heat inconstant, but likewise the Sand he uses becomes so heated by the Bed, that it maintains the Bed in gradual Heat much longer than the Dung could do alone, and gathers to it self a Body of Heat which is continued and regular.

At the same Time I have heard of hot Beds of Sand, which are now said to be used in *Holland*, and are not so apt to raise unwholesome Damps as those Beds made of common Horse-Dung, but at present know not exactly how they are composed; but if I may give my Conjectures how we might prepare Beds of this kind to answer the End of Gardening, I would do it in the following Way.

For the first, we must raise a Floor to be lay'd with ten Inch or Foot-square Tiles, of the same Length and Breadth as a Frame of Lights may stand upon. This Floor should be about two Foot above the Ground, with a Stove underneath it, and a Flue from thence so disposed, as to give an Heat as equal as possible to the whole Floor.

When this is done, we must raise a Wall two Foot high from the Floor, to encompass its four Sides, which must be filled with Sand of the coarsest Sort, such as is sold for scowring,

scowring, or is found upon the Sea Shore, or what is call'd Drift Sand.

When we are come so far, we are to make a little Blaze in the Stove with Bean Stalks, or any other combustible Matter of small Value, till the Floor is warm'd ; by which means the Sand which lies upon it will be heated in proportion to the Quantity of Fire, and retain Warmth for some time, which may be judged of by a Thermometer, that has been regulated for the Degrees of Heat which some Plants require.

In the Sand thus heated, we may plunge Pots with Seeds or Plants, and find our Advantage as much, in my Opinion, as we might do in a common hot Bed ; for the Dung in a hot Bed ought to have no other relation to the Education of a Plant, than what proceeds barely from its Heat.

But if we have other Occasion for our Sand Heat than the plunging of Pots will admit of, the curious Mr. *Laurence*, to whom we are obliged for several useful Discoveries, has furnish'd us with one for our purpose ; which is to prepare a *Frame* with *Wiar* at the Bottom, so closely knit together, that it may hold fine Mold, and give Passage for Water. The use of a Frame order'd in this manner is, that it may be moved or shifted from Bed to Bed, when the Heat begins to fail, without giving the Plants any Check in their Growth. And I conceive a Frame of this kind will be very proper for the Sand Bed I mention, although there will be little occasion for shifting it ; because the Heat of the Sand may be always help'd by Fire : but chiefly, because
if

if the Sand should be too hot, the Frame, Earth, and all the Plants may be raised to such a Degree above the Sand, as may moderate the Warmth ; which could not be done without a Frame of this Kind, or such a Frame as Mr. *Hall* mentions to be bottom'd with an Hurdle. Both these are to be cover'd with Glasses like the common Frame.

As I had once an Occasion of mentioning this Method of warming Sand, in the Company of a Gentleman of Fortune and great Curiosity ; he told me, that in a Convent at *Mastricht*, the Floor of a large Room was hollow underneath, and that Hollow was lined with broken Pieces of old Cannon, and other Scraps of Iron, even some of which were as small as Bits of Nails, so that every Piece of Iron might have a Correspondence with the rest. This Iron Lining met a Fireplace or Oven made of the same Mixtures in which the Fire was made, and by that means the Whole gather'd such a Strength of Heat that the Room above was very agreeably warm'd in the coldest Season, without the usual Inconveniencies that attend other Methods of warming Rooms. I suppose that a Room warm'd in this manner, might do very well in the Culture of *Ananas*, and other tender Plants.

An Account of a new Invention for raising of Water, and how far an Engine of this kind may produce a continued Motion, even though the Foundation be a still Water, or a Fund of Water without any Current.

THOUGH I cannot boast of being so active in the World, as ever to make any considerable Advantage of the Discoveries which now and then are the Effect of my Studies; yet I am not less diligent than other People in the Employment of my Time for the publick Good, and sometimes am lucky enough to hit upon an Invention that proves useful and profitable to those who can push their Fortunes.

Among other Things which make part of my Studies, I have bent my Mind sometimes to contrive ways for raising Water and meliorating of it. One of the Designs, which will afford my Reader some Speculation, I shall insert in these Papers, that it may be brought to practice, or at least cultivate such Notions among the Curious, as may help their Studies.

But before I describe my Engine, it will be necessary to shew my Reader on what Occasion it may be employ'd, and in what Case it may be most useful; which I shall explain,
by





by describing the Situation of the Ground, which first led me to the Thought of the Invention.

Near one of the most magnificent Palaces in *England*, is a very large Pool of standing Water, which lies so much below the House, that 'tis with great Cost and Labour that the House is benefited by it; nor is it more useful to the fine Gardens that encompass it, than barely to maintain Fish, and serve for Ornament: The Lands which are adjoyn- ing to this Pool, are in some Places higher than the House; and in others much lower than the Pool; both which contribute to bring about my Design: for upon the higher Ground may be made such a Reservoir as will serve the House, and the Lands which lie below the Pool are of Service to my Purpose, for raising the Water from the Pool to the Reservoir to be made upon the high Grounds; from whence it might, for Or- nament sake, be let fall in Cascades into the first Pool or great Fund of Water, and so keep in Motion for a long Time. As for Ex- ample,

Fig. I. A is the great Pool of Water, from whence a Pipe must be laid to turn an over- shot Wheel in a Pond below it, mark'd B. The Motion of this over-shot Wheel turns a Chain of Buckets, which dip in the Pond B, and are guided up and down by two Ropes, which are placed at such Distances from one another as to keep the Chain tight; so that the full Buckets empty themselves about four- teen or sixteen Foot above the Surface of the Water in B; and the Water which is thus

continually discharged from the Buckets into a Trough, runs into an upper Receiver mark'd C, where there may be about Ten Foot gain'd in height above the Pool A. When the Reservoir C is full, we may let the Water run from thence to turn an over-shot Wheel in the Reservoir D, which must be so much lower than C, as to cause a Fall to turn the over-shot Wheel in D; and this over-shot Wheel will turn another Chain of Buckets like the former, so as to carry the Water high enough to run into the Reservoir E, which we may suppose lies about sixteen Foot higher than D; and then both the Wheels with their Chains of Buckets, will have rais'd the Water about twenty two Foot above A, or the great Pool: And if that is high enough for our purpose, we may let the Water fall from thence in Cascade to the first Fountain A, to supply the Draught of Water which is expended for turning the Wheel in B; and if this be rightly manag'd and just proportion observ'd, I am apt to believe will answer the End I propose of raising Water, and the Water will be in continual Motion, and enrich it self by rolling through the Air. And this Succession of Motion I am at present perswaded may be obtain'd, if it is set on Foot at a Season of the Year when the Land Waters will furnish us with enough to fill the Reservoirs mention'd; and that there may be an Equipoise in the Buckets working up and down the Chains. I have already seen two Instances.

To Mr. BRADLEY, F. R. S.

S I R,

‘ I N your Writings you have given us some
 ‘ Account of the Growth of a Tree, viz.
 ‘ that the second Year the Tree is double the
 ‘ first in Weight, and so on in a vegetative
 ‘ Progression: Pray let us know, in your
 ‘ Monthly Papers, what you mean by Vegeta-
 ‘ tive Progression; whether the seedling Plant
 ‘ must be twice the Weight the second Year
 ‘ that it was the First, and the third Year
 ‘ twice as much as it was the Second; or else
 ‘ whether the second Year being just as much
 ‘ more in Weight as the first Year, the third
 ‘ Year’s Growth will add only as much
 ‘ more Bulk and Weight to it as the first
 ‘ Year’s Weight and Growth; and so every
 ‘ Year’s Growth to add a first Year’s Pro-
 ‘ portion of Weight and Growth and no
 ‘ more? You would oblige me, if it might
 ‘ suit your Convenience, to let me know in
 ‘ what Proportion a Tree grows for the
 ‘ Planter’s Advantage.

I am

Your most humble Servant,

R. BOSWORTH

In Answer to Mr. Bosworth's Letter concerning vegetative Progression, I shall endeavour to explain it by a Case nearly parallel to it ; which is the Increase of Money at Interest, which improves by gentle Degrees in Length of Time from a meer Trifle to a large Sum.

A Tree, which I shall here suppose to be an Oak, has its beginning in an Acorn, and that Acorn is often trampled upon and disregarded as invaluable ; but still this Acorn, as despicable as it is in the Nut, when the Earth has hatch'd it into a Plant, is equal to a valuable Consideration in Money ; so that an Hundred of them of one Summer's Growth, will sell for two Shillings and Sixpence ; which is for each single Plant a Farthing, and the Fractions of twenty Farthings or Five-pence. This Amount of Profit is already a good Step from what a few Months before was esteem'd as nothing.

From hence, let us rise a little higher : Suppose one thousand Acorns in the first Year's Shoot at half a Crown *per* Hundred, they will bring at the Market one Pound five Shillings ; but that we may avoid Fractions as much as possible in this Account, let us rate the seedling Oaks only at two Shillings *per* Hundred, which will then value the Thousand just at twenty Shillings.

Here we suppose a Sum rais'd that is capable of being put to Interest, and this Sum too is rais'd from a thousand Acorns, which, without Cultivation, were a bare Meal for a Hog, and of little Worth ; or had they been laid by in a Closet or left uncultivated, their

their Worth of twenty Shillings would have been lost to the Nation; therefore, as far as Opportunity will give us leave, I think the Production of Trees should be encouraged; which among the many who are now promoting this Study, I hope will amount to a large yearly Profit to the Nation. *N. B.* In this Calculation, I suppose the Oaks always remain in the same Place where the Acorns were set.

The second Year they grow somewhat more than the Weight of the first Year; that is, if a Plant in the Seed Year weigh'd two Ounces, the same Plant if it is in Health this second Year, will weigh about a Dram more than four Ounces *Avoirdupois*; which is not unlike the Growth of an annual Rent of one Pound to be continually put out at Interest after the Rate of five *per Cent.* and the whole Progress of the Thousand Trees in their several Years Growth, may be pretty well guess'd at by the following Table.

	Principal.			Interest.						
	l.	s.	d.	l.	s.	d.				
The first or seed-ling Year, 1000 Oaks worth	}	01	00	}	00	01				
Which Principal and Interest together make				01 01 00						
The second Year, there is a Year's Growth added, which makes	}	02	01	}	00	02				
Principal and Interest of that Year is				02 03 00						

	<i>Principal.</i>	<i>Interest.</i>
	<i>l. s. d.</i>	<i>l. s. d.</i>
The third Year	03 03 00	00 03 00
		<hr/>
		03 06 00
		<hr/>
Fourth Year	04 06 00	00 04 03
		<hr/>
		04 10 03
		<hr/>
Fifth Year	05 10 03	00 05 03
		<hr/>
		05 15 06
		<hr/>
Sixth Year	06 15 06	00 06 09
		<hr/>
		07 02 03
		<hr/>
Seventh Year	08 02 03	00 08 00
		<hr/>
		08 10 03
		<hr/>
Eighth Year	09 10 03	00 09 06
		<hr/>
		09 19 09
		<hr/>
Ninth Year	10 19 03	00 10 11
		<hr/>
		11 10 02
		<hr/>
Tenth Year	12 10 02	00 12 06
		<hr/>
		13 02 08
		<hr/>

The Tenth Year's Growth, according to the Computation I have made, that one thousand

land Oaks yearly increase one first Year's Value, besides the Interest of that Money from the First Year to the Tenth, amounts to about the Sum of thirteen Pounds two Shillings and Eight-pence; but when Ten Years are past from the Time they first appear'd above Ground, the Trees have then got so much Strength, that their Degree of Vegetation is increas'd, so that we may add one Pound annually for Ten Years, besides the Interest at five *per Cent.* that is, we may allow now two Pounds every Year for ten Years, instead of one Pound: As for Example,

	Principal.	Interest.
	<i>l.</i> <i>s.</i> <i>d.</i>	<i>l.</i> <i>s.</i> <i>d.</i>
Ten Years Growth of 1000 Oaks, is	13 02 08	00 00 00
To which we now add 1 <i>l.</i> per Ann. which makes	02 00 00	00 00 00

In all 15 02 08 00 15 00

Which Sum being added together, } 15 17 08
make the Eleven Years Growth }

Then add 21. as } 17 17 08 00 17 10
before

18 15 06

(74)

	<i>Principal.</i>			<i>Interest.</i>		
	<i>l.</i>	<i>s.</i>	<i>d.</i>	<i>l.</i>	<i>s.</i>	<i>d.</i>
Twelve Year's Growth }	20	15	06	01	00	09
				<hr/>		
				21	16	03
				<hr/>		
Thirteen ditto	23	16	03	01	03	09
				<hr/>		
				25	00	00
				<hr/>		
Fourteen ditto	27	00	00	01	07	00
				<hr/>		
				28	07	00
				<hr/>		
Fifteen ditto	30	07	00	01	10	00
				<hr/>		
				31	17	00
				<hr/>		
To which is to be added two Pounds. }	02	00	00	00	00	00
Which makes the Sixteen Years Growth }	33	17	00	01	13	09
				<hr/>		
				35	10	09
				<hr/>		
Seventeen ditto	37	10	9	01	17	06
				<hr/>		
				39	08	03
				<hr/>		
Eighteen ditto	41	08	03	02	01	04
				<hr/>		
				43	09	07
				<hr/>		
				Nineteen		

	Principal.	Interest.
	l. s. d.	l. s. d.
Nineteen Years Growth	45 09 07	02 05 05
		<hr/>
		47 15 00
		<hr/>

Twenty ditto 49 15 00 00 00 00

Which Sum of forty nine Pounds fifteen Shillings, the Value of one thousand Oaks of twenty Year's Growth, is but a moderate Computation, if they were one with another to be bought or sold ; which Price is about four Pounds ten Shillings *per* Hundred : If they were now to be cut down, it would be about the Money they would bring ; but if they were to remain growing for ten Year's longer, their Value in that ten Years would mount to that Height, that we shall find Occasion to repent of having ever cropt an Oak of twenty Years ; for from about the twenty to the thirtieth Year's Growth of Oaks, their Proportion of Increase every Year is very considerable, as appears by the following Table.

The twenty Years Growth, as above	49 15 00	00 00 00
Interest of the said Sum		02 09 09
Now add <i>per Annum</i> to the former Allowance	03 00 00	00 00 00
1 <i>l.</i> which makes		
The Principal, Interest, and the Annual Addition, make the Sum of	00 00 00	55 04 09
		<hr/>

	Principal.	Interest.
	<i>l. s. d.</i>	<i>l. s. d.</i>
Twenty one Year's } Growth	55 04 09	02 15 03
		<hr/>
		58 00 0
		<hr/>
Twenty two ditto	61 00 00	03 01 00
		<hr/>
		64 01 00
		<hr/>
Twenty three ditto	67 01 00	03 07 00
		<hr/>
		70 08 00
		<hr/>
Twenty four ditto	73 08 00	03 13 04
		<hr/>
		77 01 04
		<hr/>
Twenty five ditto	80 01 04	04 00 00
		<hr/>
		84 01 04
		<hr/>
Twenty six ditto	87 01 04	04 07 00
		<hr/>
		91 08 04
		<hr/>
Twenty seven ditto	94 08 04	04 14 05
		<hr/>
		99 02 09
		<hr/>

Twenty

	Principal.			Interest.		
	l.	s.	d.	l.	s.	d.
Twenty eight Years Growth	102	02	09	05	02	09
				107	05	06
Twenty nine ditto	110	05	06	05	10	03
				115	15	09
Thirty ditto	118	15	09	05	18	09
Now added per Ann. to the former Allowance 1 l. which makes	04	00	00	00	00	00
The Principal, Interest, with the Annual Addition, make the Sum of				128	14	06
So the thirty one Year's Growth is worth in Money	128	14	06	06	08	08
				135	03	02
Thirty two ditto	139	03	02	06	19	01
				146	02	03

Thirty

	<i>Principal.</i>			<i>Interest.</i>		
	<i>l.</i>	<i>s.</i>	<i>d.</i>	<i>l.</i>	<i>s.</i>	<i>d.</i>
Thirtythree Year's } Growth	150	02	03	07	10	01
				157	12	04
Thirty four ditto	161	12	04	08	01	07
				169	13	11
Thirty five ditto	173	13	11	08	13	07
				182	07	06
Thirty six ditto	186	07	06	09	06	04
				195	13	10
Thirty seven ditto	199	13	10	09	19	07
				209	13	05
Thirty eight ditto	213	13	05	10	13	07
				224	07	00
Thirty nine ditto	228	07	00	11	08	04
				239	15	04
Forty Year's Growth of the thousand Oaks in Principal, Interest, and Gradual Addi- tion as above, comes to				243	15	04

From

From this Calculation we may observe, that the first Year the thousand Oaks are worth one Pound, which is two Shillings *per* Hundred, or somewhat more than a Farthing *per* Tree.

The tenth Year the thousand Oaks in a Grove, may be valued at thirteen Pounds two Shillings and eight Pence, which is almost two Pence *per* Tree, or about one Pound six Shillings *per* Hundred.

The twentieth Year the same thousand Oaks will have increas'd in Value to the Sum of forty nine Pounds fifteen Shillings, which is somewhat less than five Pounds *per* Hundred, or about twelve Pence *per* Tree.

The thirtieth Year's Growth of the same thousand Oaks amounts to the Value of one hundred and eighteen Pounds fifteen Shillings and nine Pence, which is about two Shillings and eight Pence *per* Tree, or near eleven Pounds thirteen Shillings and six Pence *per* Hundred.

From thirty to forty Years, the thousand Trees have that Increase of Growth, that their Sum amounts to two hundred and forty three Pounds fifteen Shillings and four Pence, which is about four Shillings and ten Pence *per* Tree, or near twenty five Pounds *per* Hundred.

The fifty Years Growth of the thousand Oaks, following the above-written Direction, comes to four hundred and seventy six Pounds three Shillings, which is near forty seven Pounds ten Shillings *per* Hundred, or about nine Shillings and four Pence *per* Tree.

A Pro-

A Proportion of this Kind is what I suppose is analagous to the Method of Growth in an Oak ; and from the best Information I can get, I am apt to think, that the Parallel I have drawn very nearly give us their Value at the several Periods of Time, from one to fifty Years ; I mean as far as it concerns their Price in Plantations for Timber ; for in Nurseries, I am sensible that the Oaks which are there brought up for Sale, and for transplanting, must bear a much higher Value than I have set them at, in ten or twelve Year's Growth, because in such a Case the Land is dear, and the Labour of Workmen very expensive ; but I mean only such Oaks as proceed from Acorns in Forests, or other Waste Grounds.

As for the Calculation it self, I have not meddled with the Farthings or Half-pence, because I would avoid those Fractions, which would have made the Account tedious in the working ; and besides such Fractions would have render'd the Account obscure to many of my Readers : But I believe the Method I have taken is not very wide from the Mark I aim'd at, of shewing the valuable Growth of an Oak, whose Vegetation is one of the slowest of any of our *English* Timbers.

For, at the Tenth Year, as I have observ'd, the Use that can be made of a young Oak cannot be worth above two Pence, when the Labour of bringing it to use is consider'd ; a Coul Staff, or the Handle of some working Tool, is the best Service it can be put to.

But an Oak at the twentieth Year's Growth begins to gather Substance, so that its Contents are near four times as much as it was before, and its Value in Use cannot then be rated at less than one Shilling in the Wood or Place of Growth ; nor is it worth more, as I have experienced, for a Lop-Bough of the same Bigness will not bring more than a Shilling, and therefore for present use, the young Plant cannot be said to be more valuable ; tho' in Regard it is so far advanced in its Growth towards a Timber Tree, the Cutting of such a Plant is the flinging away twenty Year's Time, and the Inheritance to a good Sum of Money.

The other Degrees of Value and Growth in Oak Timber, I observe agrees with most of the Observations I have made upon several Plantations which are now in *England*, where I have been inform'd of the Times of setting them, as well as the Sales of Wood and Timber which I have been at : But as I think this is the first Attempt that has yet been made, in order to account for the Degrees of Growth in the Oak, I may be excused if it is not free from Errors. I wish my Correspondents will enquire into it, and give me their Opinion, which I shall gratefully acknowledge. The Method by which I calculate, seems to answer the greatest Points, and I hope will not be unworthy the Study of those who have Skill enough in Numbers, and Examples of the Growth of Trees. But by way of Caution, I must take Occasion to mention by the by, that every sort of Tree does not grow alike ; we have some Kinds

II.

I

which

which do not make any Figure till sixty, eighty, or an hundred Years; and others, which may return good Profit to the Owner in twenty, thirty, forty or fifty Years; the Reason of which is the Smallness or the Largeness of Vessels in the different sorts: for tho' the Trees are of different Kinds, yet I believe they are the same with Regard to the Number of Shoots, but the Smallness or Largeness of the Vessels in each Tree is the Occasion of the Largeness or Smallness of the Shoots, and consequently of the Encrease of Bulk in a Tree.

There are some Trees, which perhaps thro' the Largeness of their Vessels, shoot as much in one Year as some other sorts would do in six, eight, or ten Years. The *Abcle*, or *Abcal*, for Example, will encrease in weight annually five or six times as much as an Oak; but that sudden Growth of the *Abcle* renders its Wood unfit for Timber, while the Oak, which grows with more Deliberation, is durable, and of lasting Use; and there seems also to be the same Proportion of Growth between the Oak and the Yew Tree, by the Accounts I have had of some of the latter in Church-Yards, which Tradition has handed to us.

But it remains that I still give some other Reason why I have rated my Oaks at this Proportion of Growth; to which I answer, that as every Year in a Tree is to produce something more than the Tree did the foregoing Year, so there are naturally provided every Year a Number of new Vessels to maintain these Shoots, which the Tree is to produce;

duce; and the annual Productions of a Tree which are first *Buds* only, are supply'd with Juices by means of those new Vessels, till they are explain'd into Branches.

So again, these Branches become pregnant with Buds, and there are always new Vessels form'd to supply them from Year to Year, or from Season to Season.

Now as the Vessels which I speak of, must have their Origin in the Root, we must suppose that the more there are of them, so much the more the Trunk or Stem of the Tree must be thicken'd or enlarg'd; and it is not without Reason we observe in the Trunk of a Tree cut horizontally those Rings which Tradition tells us are the yearly Augmentations of the Tree's Bulk, or that occasion the Encrease of the Body of the Tree; we find those Rings next to the Pith are so close set together, that they are hardly to be discovered; when on the other hand those which lie nearer the Bark are more and more apparent; which happens in my Opinion from a much greater Number of Vessels being framed in the later Years than were necessary to be framed in the Years Growth of the Tree about its infant Days.

But let us suppose a Tree, at one Year's Growth, has only four Buds, which are design'd for Shoots the second Year; these Buds must have convenient Vessels to supply them the second Year with Nourishment; and as I have observ'd in other Works, these new Vessels are always framed before the Buds, as Roots are form'd always before a Plant shoots in its Branches: So I say, that only supposing

each Bud has two of these Strings or nourishing Tubes, then a Plant of one Year from Seed has (besides its own necessary Vessels) eight auxiliary Tubes or Vessels to maintain the four Buds in their Shoots for the second Year.

The second Year the same Plant has four Shoots from the four Buds of the preceding Year, and upon every Shoot about six or eight Buds; but suppose six Buds only to a Shoot, which is an Addition of twenty-four Buds, the Stem then becomes larger than it was the Year before by forty eight Vessels which are added; and tho' every one of these Vessels is not larger than a single Hair, yet so many together must apparently extend the Bulk of the Trunk or Body of the Plant. *N.B.* The Forty-eight Vessels which I mention are according to the Allowance above of two to every Bud, and so as many Branches as are produc'd from the Buds of the second Year, which were supposed Twenty-four, we might allow to have about six Buds apiece, which would be in all 144 Buds, and then the Encrease of Bulk in the Stem, if we allow two Vessels to a Bud, would be as much as two hundred and eighty times the Thickness of them would fill: So the next Year every Branch will have six Buds, and an Addition of twice as many Fibers or Sap-Vessels which correspond with the Trunk, which may be easily calculated.

In order to prove the first Calculation, I would advise those Gentlemen, who are fortunate enough to have Plantations of Oaks, or any other kind of Timber, to pick out a cer-
tain

tain Number of Trees of every sort, and at this Season, when they do not give us the Appearance of Growth, to measure them exactly as possible, and again, after three Years are past, to measure the same Trees, in order to judge rightly of their Encrease of Bulk, by comparing one Measure with the other.

The ingenious Mr. *Holt* once told us, that he had occasionally taken the Measure of some Oaks in a Grove near *Epping Forrest*, twice within the Term of eight Years, and that he found a very considerable Encrease of Bulk in that Time had been gain'd by the few Trees he had measured, but I cannot trust enough to my Memory to relate how much it was ; however I have his Promise to give me the Account in Writing, which I impatiently expect, and shall insert in my Monthly Papers as soon as it comes to hand ; but if in the mean Time any of my Readers are desirous to be inform'd of it, I believe if they direct to Mr. *Holt* at *Layton Stone*, in *Essex*, he will be generous enough to satisfy their Curiosity.

The *Able* Tree, which I suppose is one of the quickest Growers of any useful Tree in *England*, is said to grow to good Perfection in twenty Years. I have seen some Trees of that Growth, according to the Information I had from the Person who planted them, that were almost eighteen Inches Diameter in the Stem one Foot above the Root ; their Branches were very spreading : Therefore this sort of Tree should not be neglected, as it brings speedy Profit to the Proprietor ; and the Oak and other Trees for great Use should
be

be planted at the same Time, that there may be a Succession of Timber after the first twenty Years.

The *Abcles* which I mention were valued, when I saw them, at one Pound Sterling *per Tree*; and Mr. *Hartlib's* Account of the Growth of *Abcles*, is not very different from what I have mention'd; where he tells us, that the least Set of an *Abcle* will grow in two, or at most in three Years, above the Reach of the tallest Man. And in another place, mentions an *Abcle* set, which in twelve or thirteen Years at most, was as big as his Middle; and also, that in the Year 1647, two Rows of *Abcle* Sets three Inches about, were planted at twenty four Foot asunder, and by the End of the Year 1650, their Boughs met cross the Walk. He likewise observes, that an *Abcle* Tree at *Sion*, was lopp'd in *February* 1651, which by the End of *October* 1652, had put out Branches as big as a Man's Wrist, some seven, and others ten Foot long.

From the foregoing Observations of Mr. *Hartlib's* and my own, we may discover, that the *Abcle* is very speedy in its Vegetation; and, I presume, that the larger the Tree is lopp'd, so much the larger will the new Shoots be that come from it; which, however, the Conjecture may be reasonable, yet few have observ'd it. We might weigh and measure the Loppings of a Tree at certain Periods of Growth, and from thence judge of the Weight of the Body of a Tree. But I have said enough at present upon this Head, and shall be obliged to such curious Persons who will send me their Remarks upon it.

Some

Some Observations and Conjectures concerning Sheep, and of Methods to bring them artificially to Blossom ; so that some Sheep in every Flock, may, in every Month of the Year, produce Lambs.

THE Observations which I have made concerning Sheep, has given me many Occasions of Reflection in a Philosophical Way, how far they may be improv'd: Their Use is very great in our Nation especially ; their Wool is of that Service to us, that one may say, the greatest Part of our People are employ'd or benefited by it ; their Flesh is, perhaps, as generally admir'd as any part of the *English* Diet ; their Skins, Fat, Bones and Entrails, are all valuable, or is there scarce one Part lost to the Publick.

We are told that we have now in *England* several kinds of Sheep, which are by some distinguish'd by the Coarseness or the Fineness of their Wool : Some are more abounding in Wool of a coarser sort, and some again are noted for carrying greater or lesser Burdens of either sort of Wool, or in Terms used by the Husbandmen, are of *deeper* or *shallower Staple*. But whether the same Breed of Sheep may not produce a deeper or shallower Staple, or finer or coarser Wool, from the

the different Food which several Countries afford, I shall consider by and by.

Our Countryman *Markham*, who in some Things proves to be very right in his Thoughts and Observations concerning Cattle, remarkably describes the Difference which we should observe to distinguish between the good and bad kind of Sheep in *England*. He tells us, that if we would chuse such Sheep as will bring a fine Staple of Wool, from whence may be drawn a Thread as fine as Silk, we may find them about *Leominster*, in *Herefordshire*, and in some other Parts of that Country, and also in the Parts of *Worcestershire* adjoyning to *Shropshire*; yet these Sheep, he observes, are of very little Bone, black-faced, and bear a very little Burden of Wool. The Sheep upon *Cotsall* Hills are of better Bone, Shape and Burden, but their Staple or Wool is coarser and deeper.

The Sheep in the Part of *Worcestershire* which borders upon *Warwickshire*, and many Parts of *Warwickshire*, all *Leicestershire*, *Buckinghamshire*, and part of *Northamptonshire*, and the part of *Nottinghamshire* likewise which is exempt from the Forest of *Sherwood*, are large bon'd Sheep, of the best Shape and deepest Staple, chiefly if they are pastured; yet is their Wool coarser than of *Cotsall*.

The Sheep which are the largest of all, are in the Salt Marshes in *Lincolnshire*, but are not esteemed to be valuable in Wool; for their Legs and Bellies are long and naked, and their Staple is coarser than all the rest.

The Sheep in *Yorkshire* and the more North Parts of *England*, are of reasonable big Bone, but of a Staple rough and hairy. The

The *Welch* Sheep are the least profitable in Wool of any other, but their Mutton is sweet and delicate, their Bodies are small.

From some other curious Observations of a great Author, we might suppose that the Fineness of the *Spanish* Wool depends upon the kind of Sheep in *Spain* ; and he proposes, for publick Benefit, that we should send to *Spain* for Sheep. But it is beyond all Doubt, that *Spain* had their Sheep, which produce the Wool which is so valuable, first from *England*. This Author wonders that our Sheep-Masters have not procured some of those fine *Spanish* wool'd Sheep, supposing that for a Time it would mend our Wool, if not continue so for ever. He hints likewise, that *Dutch* Sheep will ordinarily bring two or three Lambs, and that *Turkey* Sheep are very large with great Tails ; but that their Wool is coarse, not only because of their coarse Feeding, but because in hot Countries they often mingle with Goats.

Now from these Observations, and my own upon them, I shall draw some Inferences which may perhaps be serviceable to a judicious Farmer, or such Sheep-Masters especially, who know the Profit of good Wool.

We may gather from the Remarks which have been mention'd, that the Difference between one and the other sort of Sheep consists in the Largeness and Smallness of their Bodies, the Bigness or Smallness of their Bones, the Roughness or Fineness of their Wool, or whether they bring a greater or lesser Burden ; and this we find happens more

or less as the Sheep are fed, in some Places, after a different manner than they are in others.

Let us then proceed to examine how Nature acts in other Cases; that is, how it happens that Animals of various Kinds, and Plants of different sorts, are apt, now and then, though we still look into those of the same Breed, to be bigger bodied than others, some to have longer Hair, and perhaps very fine, others to have shorter, and very strong and hard: How small Silk Worms, though of the same Kind, in common with the best, should give us the same Length of Silk as the rest, and much finer, and therefore more valuable: How Trees and Plants, though of the same Species, should alter so much, as to have their Leaves, Blossoms, and Fruit of more or less luxuriant Growth, even so much as that one of the same sort shall not fill, either in Leaf or Branch, half so much Quantity of Space, or take up so much Room as another, altho' the Figure and Colours in all Parts do not vary. This, I think, depends either upon the Quantity or Quality of the Nourishment every Animal and every Vegetable receives; if it is more, all the Parts are more open'd, distended, and are more coarse or large to the Sight; if the Nourishment is less, the Parts of those Bodies are less fill'd or explain'd, and they must be more minute and fine than the others which receive full Allowance of Nourishment.

But to come to Proof of this, if there is any Question, we may observe, that the last

Egg

Egg laid by a Fowl is generally hatch'd in so low a Condition in Point of Magnitude or Strength to the rest of the same Brood, that such a Chicken never after can arrive at the same Perfection with them ; for this last lay'd Egg could not receive the same vigorous Nourishment from the Hen that the first did, nor can I suppose such an Egg could be so powerfully impregnated by the Cock as were the first ; therefore the want of prime Strength in both the Male and Female, seems to be the reason why the latter Egg does not produce a Chicken of so big Bone or Parts as the first lay'd Eggs, tho' they were all incubated or set upon at one Time.

And again we must observe, that this Mignon Chicken, as its Parts of the Body are less nourish'd than the rest of the Brood, so the Feathers upon its Body are not so large or luxuriant as those upon the Bodies of the others ; for Feathers like Plants are larger or smaller, as the Juices of the Bodies they spring from are more or less abounding in Strength of Nourishment.

2dly, When I have for Experiment sake hatcht the Spawn of Fish in Earthen Pans, fill'd with Water, and a Coat of Earth at the Bottom of them, I found that the Spawn or Fry of every particular Fish kept together ; but that one of the Fry was always less than the rest, and brought up the Rear, which in every Example I have seen was constant ; so on the other hand, the Fish of each Fry which led the Shoal was always bigger than the rest ; which I suppose happens for the same

Reason I have mention'd concerning the Fowls.

But when I came to compare the young Fish which I had hatch'd in Earthen Vessels, with those which were of the same Season hatch'd in the River, I found that there was more than a third Difference in their Size, those who were Possessors of the River were so much better nourish'd than the Fish I had hatch'd and fed in a narrow Compass.

Upon the Tryal which I have now mention'd, an Acquaintance of mine took a young Fry or Shoal of little Carp, and put them into three Ponds; he finds that in one Pond the Water happens to be so rich and advantageous to them, that they are about half as big again as those which were put in the other two Ponds, and that there is a remarkable Difference in the Size of the Fish which are in the last two Ponds I have mention'd.

The Pond where the largest Fish are found seems to be advantaged by the washing of a neighbouring Hill, when quick Showers happen.

The other two Ponds are not so well plac'd as the former, one of them is upon a Clay, the other upon a Gravel, and are nearly of the same Bigness; of these two we find the Fish in the Clay Pond are larger than those in the Gravelly Soil; so that as they have more or less Nourishment in one Pond than another, they are larger or smaller in Proportion, tho' they were all of the same Breed and Age, for the Spawn of one Fish
hatches

hatches all in one Day, nay within three or four Hours Time.

3^{dly}, If we take the Seed of any Plant from one Head or Seed Pod only, and sow that Seed in three or four several sorts of Soil, some of the Plants which spring from that Seed will be more luxuriant and vigorous than others; according as the several sorts of Land have Salts in them necessary for the Nourishment of the Seed sown in it : I have sown Rye-Grass Seed gather'd from one Stalk or Head in four several Places, and the Encrease of Vegetation has been nearly as different as if I had sown four different sorts of Grass; they are more or less vigorous as they have a greater or lesser Share of Nourishment.

So all Cattle, where they find Grass or other Food which yields them a natural Plenty of Nourishment without Abatement, during the Time of their Growth, have their Parts more fully explain'd, so that they are much larger in Bulk than those of the same Breed, which are pinch'd in their Diet, or have plenty of such Food which is not agreeable to them, for one and the other are equally detrimental to them. And so likewise when Cattle are come to the Extent of their Growth, that we can discern by their Bulk, whether they have fed plentifully or sparingly, we may reasonably suppose that either their Hair or Wool, which are so many Plants growing upon their Bodies, will be more or less sizable : If they are large in Body they have more Juices to supply and nourish their Hair or Wool; and in such case
that

that their Hair or Wool will be stronger or coarser, and their Flesh more spongy or less firm, than what we find in those of the same Race which have fed on shorter or less luxuriant Diet ; for I observe, that such Cattle, either Sheep or Kine, which have a short Bite, or are sparingly dieted, have generally if not always finer Coats than the former, for the Reason I have given before. But we should observe likewise, that this full or scanty Food must begin from their Birth, and it is this I think that will make them larger or smaller boned, tho' they all come from the same Stock. So the short Bite of Sheep upon some Downs or Heaths, or some Herbs which they find there, may occasion their Bodies to be small and their Wool fine ; as on the contrary rich Land abounding in high Grass, or the Herbs naturally growing with such Grass, may probably be the Occasion of the large size of Sheep feeding there, and of the Coarseness of the Wool ; so likewise do these Kinds of Food bring the Ewes to blossom or to the rut sooner or later in the Year : But to use Art with them upon such a Foundation, one might have Breeding Sheep for any Month in the Year ; it has been try'd upon some Creatures which never have been known to couple in our Climate, and has had an immediate Effect upon them.

In some Parts of *North Wales* I am assured, that Goats often couple with Sheep, and therefore the Wool is sometimes worse than it is elsewhere in *England* ; and Care should be taken if possible, to prevent it : Nor should we chuse our Rams of such Kinds as
have

have Horns, for their Offspring endanger the Ewes in yeanning. The Dodder Sheep are prefer'd by every Shepherd of Judgment, being good Breeders with little hazard.

Some Observations concerning the Breeding and Suckling of Lambs in the House.

WE are first to remark, that the Ewes which are fed in some Parts where there are invigorating Herbs, go to rut or blossom in every Month in the Year, except *April, May,* or the Beginning of *June*. These Herbs which are so invigorating and forcing to the Spirits, are more particularly found in dry than in wet Places ; but at present I shall not mention their respective Kinds, not having by me the Memorandums that concern them ; but in some future Papers I shall promise my Reader a List of them, together with some Directions from Experience, concerning bringing Ewes to rut in *April* and *May*, so that every Month in the Year some of his Sheep may produce Lambs. But in the mean Time, I must acquaint him, that whatever Ewes he finds most forward to rut in *December* or *January*, he must keep them from taking the Rams, which every skilful Shepherd knows how to do.

But,

But, however, concerning the Suckling of Lambs, it will be first proper that I explain some few Terms which are necessary to be used, and which perhaps may not be understood in every County.

1st. Bastard Ewes in *Surry*, are those Ewes which suckle the Lambs of other Ewes, or have lost their own.

2^d. Bastard Lambs are such Lambs as have lost their Dams, and suck upon other Ewes.

3^d. Tod Belly, is when a Lamb is thin belly'd like a Greyhound, or cling'd up.

4th. To suck at head, is a young Lamb's sucking the first of the Milk.

Now, with regard to the House for Lambs it ought to be divided into Stalls, that every Lamb may be more conveniently suckled; and Care ought to be taken that too many Lambs are not put into one House at one Time, lest they fall distemper'd, and become Set or Tod Belly'd; to prevent which, also Care must be taken that what Milk the youngest Lambs leave (if any) may be suck'd by the oldest Lambs.

If you have any Bastard Ewes, suckle the eldest Lambs, beginning about Seven in the Morning, and about Four in the Afternoon; and when the Bastard Ewes have Milk enough to suckle all your Lambs thereon, then put in the Dams only at Noon, and between Nine and Ten at Night, and out again between Nine and Ten in the Morning.

To avoid Mistake, which might happen in the Suckling of many Lambs, we must mark them to know which has been longest in suck on the Bastard Ewes, and those which have

have been long at suck to suck, still at Head.

As soon as possible, let your Ewes Udders and Tails be clip'd from the Wool, to keep them clean from the Dirt they are apt to gather in the House.

When those which suck at Head on the Bastard Ewes have had their Meal, put on those Lambs which you design next to suck at Head, to suck those Ewes clean of their Milk.

Observe if you have any Twin Lambs or Damms that give little Milk, help them on the Bastard Ewes.

Feed your Lambs on Flour, Wheat or white Pease in Troughs, and with Wheat Straw in Racks, and sometimes fine Hay, but Straw is better for the Colour of their Flesh.

I should be fuller yet upon this Head of Lambs in Argument for this Practice; but as it will require a Cut to explain it somewhat more fully, I design to insert it in my next.

But before I conclude, I must take Notice of a Piece of Foreign Husbandry, which is of good Use where it is practised, which depends upon the Housing of Sheep at Night, and from whence we have taken the Method of folding our Sheep at Nights for the Benefit of Land. In *Flanders*, and other Parts of the Continent, where the Sheep are endanger'd by Wolves, they are hous'd every Evening, in Places spread with clean Sand, about five or six Inches thick; which Sand Floor, being every Night renew'd, occasions the Whole to be taken away about once in a

Week, and is so rich, by the Means of the Dung and Urine of the Sheep, that 'tis purchas'd at great Rates, and makes excellent Manure for stubborn Ground.

To Mr. R. S. concerning the Improvement of Land, by sowing of Onions.

S I R,

AS I am under an Obligation of keeping a pretty large Correspondence, on account of my Studies, you will excuse me that I did not answer yours sooner; some are in more haste than others, and unless the Occasion of Letters require immediate Dispatch, I answer them in turn as I receive them, which now and then has given Occasion to some Gentlemen to imagine I neglected their Friendship. You desired my Opinion of *Onions* and *Saffron*, how they might be planted, and in what Soil; but I must assure you, there is no Time lost to you on that Account, for as your Letter bears date in *September*, it was impossible to do any Thing to the Purpose, in either propagating of *Onions* or *Saffron* so late in the Year; for then *Onions* are out of the Ground, and *Saffron* is in Flower, as you observe in your Letter; and it is next to Death to
move

move any lasting Roots of that sort at that Time.

In the next Place, as you desire to know the Native Place of every Tribe of Fruit which we now cultivate in our Gardens, it has employ'd much of my Time to discover to what Parts of the World we owe those several Enjoyments, as I shall mention in their Turn ; for I think it will be no small Help to know the Climate in which every sort of Fruit had its original Spring ; for then we might have a better guess at the several Situations and Exposures necessary for each in our Gardens : besides too, by means of our extensive Trade, we may learn even the Qualities of those Soils which Nature has bestow'd on every Fruit bearing Plant, for its wholesome Nourishment.

But to begin with the *Onion* : I am perswaded there is not any Root which brings more Profit to the Planter, with small Expence, than it self ; for one Year I knew that much less than an Acre of *Onions* were sold for threescore Pounds, after they had been dry'd on a Kiln ; but indeed that Year the Ground, by means of Frosts, was so confined, that the Gardeners in many Places had not Opportunity of putting in the *Onion* Seed till about the Middle or End of *March*, and some later ; so that as they came out of the Ground the Fly destroy'd them ; and as I have more than once remark'd, 'tis about the Beginning of *April* that the Fly which infects the *Onions* in their most tender State commonly appears ; and I find that the Person who sold those *Onions* had taken

a more early Opportunity of sowing them than other People ; for upon the first Breaking of the great Frost, *Anno* 1714. he put in the Seed, and tho' it happened to freeze afterwards, the Seed shelter'd in the Earth began to prepare it self for that Germination, which appear'd before others had sown any Seed at all ; so that when the Fly came in *April*, either thro' shelter from Blasts, or the vigorous State of the young Plants, they were render'd capable of defending themselves against the Fly. But however this may be supposed to be accidental, yet I find that an Acre of *Onions*, one Year with another, may be made worth upwards of Forty Pounds ; or even more profitable than if a Quarter of that Quantity of Ground was spread or cover'd with one Stratum or Layer of Apples, as close as they can lie together ; for the Hough which goes between the *Onions* is but two Inches wide, or thereabouts, when they are bent in Growth ; and the *Onions* in their Roots, when they are full grown, one with another, may be about an Inch and half Diameter : so that my Conjecture is rather under than over the Matter ; for in Orchard Trees, I am very apt to believe the Apples produced by every Tree, lying in a single Layer upon a Flat, will not cover that Space of Ground which the Tree spreads over, besides the common hazard which the greater Bodies are subject to of being frequently blasted by their more aspiring Growth, while the lower Race lie under shelter, and safe from the bolder Attempts of the Air : So that for this Reason an Acre

of

of Onions are better than an Acre of Apple Trees, not only each single Year, but one Year with another. To this I may add, that many sorts of Apples and Onions, when they are sold in tolerable Years, by the Peck, yield about Six Pence *per* Peck; these indeed are the Refuse or Scum of the Crop; but in the same Proportion, with regard to one another, do they bring Benefit to the Master, when they are the Choicest of the Crop; for the best of the Onions are always clean'd and dry'd on Kilns, and are much more refin'd in their Flavour, and more gentle and sweet to the Taste, than those which are not dry'd: By the first, I mean those which are commonly sold about *London* in Ropes, and by the other I mean those that are sold by the Peck. The *Spanish* Onions are all dry'd, and therefore loose their pepper'd Relish, and besides by the Drying of Onions, they loose that Spirit of Vegetation which would else promote their growing before we could use them in the Kitchen.

From hence I am led to think, that when any Onion begins to sprout, Nature is active, and then it desires the Earth, and should immediately be planted for to gather Seed from, especially if the Root is large, and promises Strength and Vigour; for, how can we expect an healthful and vigorous Offspring, unless the Progenitor has a natural and healthful Strength of Body? Or to follow the greatest Authors, we may say, that if we follow Nature, we are in the Road to Wisdom. It is certain, that when an Onion begins to sprout, it is its Time of growing,
and

and the Earth is requisite then to support its Design: But it is not every Root of this kind which sprouts just at the same Season; some will begin in *November*, some in *December*, and others in *January*; but whenever any of them begin to shew their Disposition to sprout, then the All-wise Author of Nature has appointed them the Assistance of their natural Bed and Nourishment. This Argument cannot be easily overthrown by Men of Reason, because Reason is the Voice of Nature, as Nature is the Will of the Creator of Nature. Were we to speak of Brute Beasts, every one, according to his Kind, has a certain Mode of acting; so Vegetables have their natural Intent, and without that is satisfied, the Consequence is dangerous to their Health; the natural Bent therefore of every Vegetable or Animal ought to be consulted, if we have any regard to it, or otherwise we might often become Sufferers by the Neglect. From this Remark we may gather, that not only Onion Seed, but all others, when they come from strong Roots, will produce more lusty Plants than the Seed which is saved from mean unnourish'd Roots.

In the laying up of Onions, we find that where they have not been well dry'd, or are laid too close together, or in too great Heaps, they sooner begin to sprout, than when the more watry Parts are exhal'd by the Sun, and they are laid singly; so that 'tis necessary to guard against these two Evils, if we desire our Onions to last long in Kitchen Use; but if we design to gather good Seed
from

from them, the above Directions may take Place.

Now when we have taken this Care of the Seed, let us consider from a preceding Argument, that we must sow it as soon as the Earth begins to retake its Power of acting upon Vegetables of this Kind. My Relation will inform you, that the greatest Success was by putting in the Onion Seed in *February*, as soon as the Weather was open; and it has been my constant Rule never to sow the Seeds of any Bulbous Root, later in the Spring of the Year: And it is no less certain, that an Onion is so much a Bulb, that all Bulbous Roots are stil'd Onion Root-ed Plants. I find, that if I sow any of this sort of Seed later than *February*, my Seeds are in danger of being lost, either by Vermin in their tender State, or by mixture of Weather too rough for them, when they first appear above Ground, or else by a too dry Season, which is common in *March*, so that the Seed does not come up at all.

The Land which is commonly chosen for this Purpose is a generous Loam, which is supposed to consist of about equal Parts of Sand and Clay; and even tho' this Soil is more generally inclined to assist Vegetables than any other, yet it is thought by some to require a large Quantity of Manure or Dung to make it agreeable to the Vegetation of Onions: But from my own Observation, I find that this Loam of it self, without the Charge of Dung, brings Onions as large and as good as the dung'd Ground; this I observed in some Gardens where the People
told

told me they never had apply'd any Manure to the Land, but what they had now and then taken out of the Ditches, and the Drift Sand of the High-ways. In some other Places I took Notice of Onions of a tolerable good Size, and extremely well tasted, which were sown upon a black sort of Sand, which Soil seem'd to be intermixt with about a third Part of Fiborous Roots, such as the Roots of Heaths ; and from the State of the Land about it, I am perswaded it was so, and had not been long enclosed ; but however, the People told me, when I spoke in praise of their Onions, and enquir'd how they had enrich'd the Land for them, that they had not done any thing more than dig it up and sow the Seed.

In my own Garden I have had as good and large Roots of this sort, without using any Manure, as my next Neighbour, who has cover'd his Ground four Inches thick with Dung ; so that I am of Opinion, the great Expence of Dung may be saved in this Case, and that sandy and heathy Ground, and the Loam which I have mention'd, may by good digging or plowing, and timely sowing, be render'd capable of producing a valuable Crop. I have seen an Acre or two of good Onions growing in a sandy Field, near *Windsor*, where little Dung was used.

Again, in the Management of a Crop of Onions, we must observe, that when they are grown to be as big as the Stem of a Crow Quill, they must be houghed, as well to clear them from Weeds, which would annoy them while they were young, as to set
the

the Plants at a due Distance one from another ; the Breadth of the Hough Blade, as I have observ'd, is about two Inches, and it should be a careful Man who is used to the Work that is employ'd on that Occasion, for there is not only requir'd a great Care in treading over the Land, with regard to the young Crop, but a foreseeing Eye to guide and conduct the Hough forwards, that no more are cut up than what are necessary : In short, the best Husbandmen have given four Pounds, and four Pounds ten Shillings *per* Acre for this Work, when they knew their Workmen, as one may well guess at by viewing a little Piece of their Work, by way of Sample, about two or three Days after they had done it ; for then the Weeds which they had cut down will have little Appearance, and the standing Crop will shew it self, especially if we sprinkle Water over it, which darkens the Ground.

When your Onions are thus put into a thriving Method, we need have little Care of them till we perceive their Roots have nearly done growing, and then the common Way is to bend down their Leaves with an Arbour Pole, or to any other Way more convenient for the common People. Suppose this Way stops the Motion of the Sap, and by that Means the Root benefits in its Growth, and if so it is certainly worth while to do it ; for if every Onion in an Hundred, one with another, should gain two Ounces, and by this Means every Onion should gain but half a Quarter of an Ounce, then there would be a very consi-

derable Profit; and this additional Weight will likewise prove additional in Point of Measure, so that an hundred Roots which might perhaps fill the Measure of a Bushel without such an Art used, then if the Art used has the Effect 'tis supposed to have, we may expect half a Peck added to every Bushel, which at the least Price of those Onions, sold by the Peck, is Three Pence, which in an Acre well managed will about pay for houghing. I confess I have follow'd the old beaten Road so far as to do this, but I cannot be positive of the Success. All that I shall say therefore upon this Point is, that it is a receiv'd Opinion among Husbandmen and Gardeners, and wish that it has the Effect which is commonly understood by it; a small Tryal cannot harm you very much.

When the Pipes or Leaves of the Onions begin to loose their Juvenile or youthful green Colour and change yellowish, it is Time they are taken out of the Earth and dispos'd in the best way to dry; therefore in rainy Weather 'tis improper to pull them out of the Ground; we should have some Prospect of fair Weather, as we consult in the way of cutting Grass for Hay, or reaping of Corn, for Onions must be well dry'd before they are laid up, or they will never keep for household Use; and I have known some People who have had the good Fortune to have cover'd Sheds enough to dry their Onions in, when Rains have began to fall, which has been greatly to their Advantage; for about the Time of taking them up
it

it commonly happens that the rainy Weather begins, as it is uncertain, when Grass is cut for Hay.

And now, Sir, from these Remarks we may gather enough to answer the End of your Letter, as far as it relates to the Method of improving Land by sowing of Onions upon it ; how the Advantage may arise by saving of the Seed is an Article which is not mention'd in your Letter. I should now proceed to give you some Account of the Manner how to propagate *Saffron*, but I shall defer the *Saffron*, &c. to another Opportunity.

I am, SIR,

Your humble Servant,

R. BRADLEY.

P. S. You may consider that after the Onions are out of the Ground, the Land will be good for Winter Spinage.





A Letter to Mr. Bradley, concerning the Influence of the Steam of Salt-Petre over Orchards.

S I R,

I Am situate in a Country near a Petre-
 ' house as we call it, or in other Terms
 ' an House where such Salt-Petre as is
 ' brought from abroad is boyl'd and refin'd
 ' for Gun-Powder. This Place is so near me
 ' as to communicate the Steam of the Nitre
 ' when the People are at Work, to the grea-
 ' test Part of my Orchard and Garden, and
 ' in the Opinion of some is injurious to my
 ' Trees and Plants; but however my Or-
 ' chard is influenced by it, we are certain
 ' that it never fails to bring me a very plen-
 ' tiful Crop of Fruit every Year, tho' all
 ' those about it have very little, or hardly
 ' any, and yet my Garden is not less ex-
 ' pos'd to blighting Winds, by its natural
 ' Situation, than the other Orchards in the
 ' same Town. If I may therefore judge
 ' from the Consequence, the nitrous Vapour,
 ' which mixes with the Air that surrounds
 ' my Garden, prevents Blights, and is noxi-
 ' ous to the Caterpillar. I remember Lord
 ' Bacon,

' Bacon, in his *Natural History*, commends
 ' the Use of Nitre for the Preservation of
 ' human Bodies in Health, and most of the
 ' skilful Botanists have given it no less a
 ' Character for the Preservation of Vegeta-
 ' bles, if its Quantity be rightly proporti-
 ' on'd. Now as I take it, the Air which is
 ' supposed to bring Blights is in it self thin
 ' and very quick of Motion; and therefore
 ' the Nitrous Fumes raised at one End of
 ' my Garden can not mix with such Air in
 ' too great Quantity, by means of its Thin-
 ' ness and quick Motion, for the Nitrous
 ' Vapour has much grosser Particles than
 ' the fine Air which moves with it, and the
 ' Quickness of Motion of the fine Air may
 ' drive before it the Fumes I mention with
 ' that Quickness that there cannot lodge
 ' too much of it upon my Trees, and thus
 ' mixing indifferently with the Air, may
 ' put that Air into such a State, as may
 ' (agreeable to an Observation of yours)
 ' contribute to the Destruction of Insects or
 ' their Eggs, which are the Blights in Trees.
 ' Or if Nitre is allowed to be salubrious to
 ' Trees, and keep them in strength, then I
 ' remember a Maxim, that a Body duly
 ' supported by natural Diet, is not capable
 ' of admitting any Distemper, but on the
 ' contrary resists it: This alludes to what
 ' I have before mentioned, that Nitre in its
 ' due Quantity is a Preserver of Health in
 ' Plants, and more particularly because you
 ' say in some of your Works, that a State
 ' of Air well regulated and appointed in
 ' its Qualities, is received as well into some
 ' Parts

‘ Parts of Plants, and cause their healthful
 ‘ Disposition, as a Case of that kind would
 ‘ do when the Animal Kingdom is the Sub-
 ‘ ject. ’Tis for Reasons of this sort that I
 ‘ suppose my Orchard is not so subject to
 ‘ be blighted as the rest in our Town, which
 ‘ have not the same Benefit from the Va-
 ‘ pour of the Salt-Petre. I should be glad
 ‘ to know your Sentiments of this Matter,
 ‘ and am,

S I R,

Your Humble Servant,

A. B.



To J. C. Esquire, concerning a Figurie or Plantation of Fig-Trees.

S I R,

THE last Time I saw you I remember our Conversation was bent upon the Cultivation of the Fig-Tree, a Subject which has been very rarely touch'd upon by Authors, and as rarely look'd into by our Gardeners; for Figs, however excellent they are, have not yet so thoroughly gained upon the *English* Palate as to be generally admired.

The Reason perhaps may be, because only one of the most indifferent Sorts has been in common with us; or else that where some of the better kinds have been planted, the want of Skill in their Management may have either rendered them barren, or made them bring their young Fruit at such Seasons when our Climate could not ripen them: But that every one who are yet ignorant of the Excellence of Figs may have it in their Power to be as much regal'd with them as those Gentlemen who have eaten them Abroad, I shall give you my Thoughts of a Figurie or Fig Plantation in this publick Manner.

To begin with the Fruit it self; it has been supposed generally to bring no Blossom, and it has rais'd Wonder in many ingenious Men: Neither the Antients or Moderns have

have accounted for this Phenomenon, till Monsieur *Jeoffroy*, a curious Physician at *Paris*, took it in hand, and his Undertaking has shewn him to be no less curious in his Enquiry than happy in his Judgment.

Upon the Foot of the Discovery of the Generation of Plants, he has, with a great deal of good Reason, consulted the Nature of the Fig; he has examin'd the Fruit at different Seasons, and at different Stages of Growth, till at length he discover'd the Clue to that dark Passage in Nature, and has unravel'd the Mystery to us.

The Fig fruit, he observes, is not only a Nest of little Fruit disposed withinside of the Skin, but every Seed or Fruit therein has all its Female Parts of Generation, as much as if it was a Capital Flower; and every one of these is so placed, that the Hollow in the Center of the Fruit is large enough to permit every one to receive the *Farina Fæcundans* which may be flung upon them by the Apices or Male Parts which lie in the upper Part of the Fruit; and he is yet so exact to mark us out those Parts which do the Office of Petals or Flower Leaves above the Apices to preserve them from the Weather. This Gentleman has joyn'd a very accurate Cutt of all the Parts of this Fruit done with a Microscope, at the End of a Memoir he deliver'd at the Royal Academy of *Paris*, which was publish'd about four Years ago.

The Objections which had been made to me by some People upon Mr. *Geoffroy's* Observations are trifling; for as they say they

they observ'd the Fruit only when it was ripe for the Table ; they could not then certainly find the Apices he mentions, for 'tis a Thought as absurd as for a Painter to paint every sort of Tree or Herb with the Flower or Fruit growing upon it at the same Time. This is no more natural than what I have observ'd in some Pictures well painted, where the Fruits or Flowers of the four Seasons have been jumbled together.

In the present Case we must consider, that every one of the little Seeds in the Fig is a distinct Fruit, and as has been observ'd has Parts common and natural to other Fruits ; if the Male Parts, or such as give them the impregnating Dust are a little remote from them, this is no more, nor so much as we may observe in many other Cases ; and when a Fruit is full ripe, it would be a Jest to look for the Blossom.

The Oak has its Katkins or Juli remote from the Fruit Buds, the Chesnut the same, the Willow the same ; the Aspin, the Hazle, the Gourd, the Melon, the Cucumber, and many others have the Male Parts of their Blossoms situate at the same Distance from the Female or Fruit-bearing Parts, or Blossoms, tho' many other Fruit-bearing Plants have them constantly together, or in one single Blossom. But as the Fig has its Generation Parts enclosed ; so the Strawberry has all its little Fruits open and expos'd to to the Air. Every little Seed, which is in effect a Fruit, has its Male Parts to impregnate it, and when once that Work is compleated, and the Dusty Parts have done

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their Office they decay and fall off, and the Fruit remains in a right State of Growth for ripening.

The Mulberry is in many Respects of the same Kind, but the Katkins are not so near to the Female Parts of the Blossoms as the Apices of the Strawberry; the Mulberry is not one Fruit, but a Bunch of Fruit, for every Knot, as I may call it, of the Mulberry, is only a Part of the Fruit, and that is surely influenced by the Farina of the Katkins. Now the Business of Impregnation is no less possible within the Case of the Fig Fruit, than upon the Fruits of the Strawberry or Mulberry. But to leave that Point, let us consider that there are not less than forty Kinds of Figgs in *Europe*, which are in their Turns counted valuable, and many of them are so forward naturally in ripening, or may be made so by Culture, that it is possible to bring a great many Sorts of them to Perfection with us in *England*.

The Way of Planting them is early in the Spring, without letting them be long out of the Ground, for their Roots soon dry, and then the Plants languish, altho' the driest rubbish Ground is the most proper for them, or downright Gravel, where this sort of Fruit always does best. When I have a Mind to propagate a Fig, I draw a young Branch through a Pot, as I do the young Shoots of the Vines, and cut them off when a Summer is past, and from the Pots transplant them with the Earth about their Roots in Places agreeable to their Constitution; those

those which come from the hotter Climates, in the warmest Parts of the Garden, and the rest in Proportion to the Climates they come from ; for Vegetables must have their own Way, if we expect them to answer our Designs as well as Animals, or else we have no Profit from either.

The forward sorts of Figs may be planted in the Natural Ground, and being left at Liberty will bear well, but the late sorts must be forced by nailing against Walls to gain us any Fruit at all ; and in this last Case especially, the Method of Pruning should be consider'd, and I know not any so agreeable to Reason as what I have observ'd at Mr. *Greening's*, Nursery-Man at *Brentford*, whose great Curiosity leads him at any reasonable Expence to dive into the Secrets of Nature. About the End of *July* he tops the Branches of his Fig-Trees, and thereby not only prevents the Autumn Fruit coming forward against the Winter Season, but prepares his Trees to make good Shoots in the Spring, which bring their Summer Fruit with them. This, Sir, is what my Time will permit me to give you concerning Figs, and I shall gladly take another Opportunity of communicating to you my other Thoughts upon this Subject.

I am, S I R,

Your most humble Servant,

R. BRADLEY.

REMARKS upon the Weather
and Produce of the Gardens in this
Month.

FROM the First to the Sixth of this Month we had rainy Weather, and to the Thirteenth the Days were dark, without wet; from thence to the Seventeenth we had dark, hazy, rainy, and cold Weather. Upon the Seventeenth we had a Frost and little Snow, the Temper of the Air very cold, as it continued till the Twenty-fourth, the Weather all that Time dark, with now and then a little Rain. The Air was moderate from the Twenty fourth to the Twenty seventh, the Weather a little inclin'd to Rain, and from the Twenty seventh to the End we had for the most Part of the Day clear Weather, the Mornings about their Entrance were cloudy and hazy.

The Beginning of this Month I eat good Collyflowers in Surry, and a young Crop of Kidney-beans which had been nurs'd under Frames and Glasses, were in good Condition for the Table; they were sown about the Middle of July.

I saw some tolerable good Artichokes in Covent-Garden Market.

We have now all sorts of Greens or Roots that are profitable to the Kitchen:
Nor

Nor are we without several excellent Fruits, such as Apples, Pears, some Quinces, Pomegranates ; and about the Beginning I saw some Peaches, which had been so well kept, that they seem'd to be in great Perfection.

This Month likewise I eat some good Mushrooms, which were rais'd after the *French* Manner, so that we have now a Prospect of having them cultivated in our *English* Gardens all the Year about.

Asparagus upon hot Beds was common enough, and Minth, with other green Salads were found in every Garden of Note about the Town.

Mr. Fowler, Gardener to Sir Nathaniel Gould, at Stoke-Newington, had some Cucumber Plants in great Forwardness, and about the End Fruit appear'd upon them.

The End of the Month of November.



A GENERAL
T R E A T I S E
O F

Husbandry and Gardening,

For the Month of *December.*

CONTAINING

Such Observations and Experiments as
are New and Useful for the Improve-
ment of Land.

W I T H

An Account of such extraordinary In-
ventions, and natural Productions, as
may help the Ingenious in their Stu-
dies, and promote universal Learning.

*To be continu'd Monthly, with Variety of
curious CUTTS.*

*By R. BRADLEY, Fellow of the
Royal Society.*

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Pater-Noster-Row.

(Price One Shilling.)

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To the Right Honourable the
Lord Viscount *Castlemaine*,

THIS
TREATISE
OF

Husbandry and Gardening,

For the Month of *December,*

Is, with the greatest Respect,

Inscrib'd by

His most Obliged

Humble Servant,

R. Bradley.

THE HISTORY OF THE
LORD VILCOCKS OF GLOUCESTER

IN THE REIGN OF
HIS MOST GRACIOUS MAJESTY
GEORGE THE SECOND

BY
JOHN VILCOCKS, ESQ.

IN TWO VOLUMES.

LONDON:
Printed by J. DODD, in Pall-mall.

1734

By Authority of the Senate of the University of Oxford.

Printed by J. DODD, in Pall-mall.

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R. DODD.

1734

1734



A GENERAL
TREATISE
OF

Husbandry and Gardening,

For the Month of *December.*

*To Mr. R. S. concerning Saffron; how
Land may be improv'd by it, and
of the native Places of our several
Tribes of Trees; with useful Re-
marks.*

S I R,



Y former Letter to you was,
concerning the Improvement
of Land by Onions; and now
I come to answer, as well as
I can, your second Question,
concerning Saffron, and to
give you some Account of the native Places
of our several Tribes of Fruit Trees.

The

The Saffron has a bulbous Root like the Spring Crocus, but much larger; the Flower is also in most Circumstances like the Crocus Flower, and of a blewish purple Colour, but the Times of blossoming of Crocus and the Saffron are different; the Crocus I speak of appears in the Spring, and the Saffron Flower rises in Autumn; the Leaves of one and the other are nearly of the same Figure, but those of the Saffron are much the longest, and are of a deeper green Colour than are those of the Spring Crocus. It has been observ'd by some Authors, that the Saffron differs from our Spring Crocus, because it brings its Flowers naked, or before any Leaves appear, but so in effect does the Spring Crocus; for when the Flowers open, we can then narrowly distinguish the sharper Points of the Leaves, as we may do when the Saffron comes to flower; the Pistils of the Saffron Flower, which are the Parts only used in the Shops, if they are not gather'd early in the Morning, while they are most prominent, will give us reason to complain, for when the Sun begins to influence them, they shrink into less than half their first Substance, and almost retire under Ground; so the Spring Crocus likewise does the same as soon as the Flower begins to open by the Sun's Warmth. I remember the late ingenious Mr. *Moreland*, F. R. S. who for a great part of his Life employ'd his leisure Hours in his Garden, told me first of the Pistillum of the Crocus drawing it self into the Ground at the Approach of the Sun, as much as its Parts could well bear to be contracted, and
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in that Gentleman's Company I had the Pleasure of observing, that his Observation was exact and constant in near an hundred Trials of Flowers equally open'd; but in some others which were more open'd the Pistilum was shorter, in those less blown the Pistilum was longer and more spongy: However, at the Bottom of these are the Seed Vessels which lie within the Ground; and there is no Difficulty of saving the Seeds, if we timely mark those Flowers we like. Mr. *Fairchild* has rais'd abundance of fine sorts of Crocus from Seeds which he sav'd from the common sorts.

But now let us proceed to the Culture of Saffron; and first of all concerning the Soil about *Saffron Walden*, in *Essex*, which was once the chief Market for it, as well as the principal Place of its Growth; but of late Years we find it cultivated in the Grounds about *Cambridge*, and in some other Places in *England*, and find it prosper well in almost every kind of Soil, except the stiffer sort of Clay.

The Soil then about *Saffron Walden*, where I have seen it grow, is a chalky Loom, but of that Kind which is most easily broken; in some Places there is a Coat of light Earth over the Chalk, about three or four Inches thick, which is sufficiently deep for Saffron Roots; in other Places I have seen some Beds of it prospering well in common Heath Ground, where the Surface had been burnt and turn'd in by a common Plough. And I am satisfied from Experience, that the Saffron cultivated in this last sort of Land, is
not

not any ways inferior, either in Quantity or Quality, to that which grows about *Walden* and *Cambridge*; so that some Gentlemen already, by my Advice, have planted some Acres of it upon heathy Ground, and such Land as was hardly worth one Shilling *per* Acre, and have had very profitable Crops; so that I do not doubt but their Example will be follow'd by many who are Masters of such sort of Land; for there is no want of Dung or any other Manure in this Case, but what only is the Produce of the same Ground, *viz.* the Ashes of its Surface. We may observe, that whoever are the first Promoters of this easy part of Husbandry, will be the greatest Gainers, for as it comes to be more general, the Price of Saffron will assuredly fall, even though there will be a good demand for it; for the *English* Saffron is esteem'd by all to be the best in the World. I may observe by the by, that at present it is yet scarce enough to make it worth the while of some People to mix it with the Petals or Leaves of Marygold Flowers; which, was it in greater Plenty, would put a stop to that Adulteration of it, and I question not, but in a few Years, to see rather too much than too little; for I find Men are generally so disposed to follow those Methods which have been profitable at little Expence to their Neighbours, that the Markets become overstock'd. Hops is a capital Instance of it, which when they were first propagated in *Hampshire*, raised very considerable Estates to their Owners; but since the Number of Hop Gardens are so prodigiously encreas'd, we find

find they are much lower in their Price than they were about the Beginning : But, however, there is time enough yet to get a great deal of Money by Saffron ; and as such Land will do for it as has been hitherto of small Regard, so every Acre which is cultivated in this manner, will be like a new Acquisition of Territory gain'd to the Publick.

To proceed then to the planting of Saffron : When the Ground has been well prepared with the Plough, we are to provide an Instrument like an Hough, but with a Blade much broader than that of the largest common Hough. Some Blades in the stiffer Grounds may be about a Foot wide, and for the more light and sandy Lands, the Blades may be about eighteen Inches. With this Tool or Instrument the Land is drawn into Ranges, somewhat like Furrows, about three Inches deep. When one Range is made, lay your Saffron Roots in it about three Inches asunder ; when this Range is planted, then, with the same Instrument, draw another Range on the side of it, and the Earth which will be turn'd out of the Second, will cover the Roots planted in the First. In the planting this Root it should be observ'd, that the Depth of every Range or Furrow should, as near as possible, be the same : The Time of planting these Roots is commonly about *Midsummer*, for then the People in the Saffron Countries generally take up their Store out of the Ground, and then they may be bought in the Markets by the Bushel, which is not always of one Price. About that Season we may meet with them, and at no other Time.

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But however this Custom prevails in the Saffron Countries, I am sure from Experience, that Saffron Roots may as safely be taken up as soon as the Leaves are dead, as to let them lie in the Ground a Fortnight or three Weeks afterwards ; for the deadness or falling of the Leaves of any Plant, shews its natural Disposition to rest from Growth, and then it has no great Occasion for the Earth's Assistance, till the Time draws near of its awaking again to its Business of Vegetating. But the Ground being planted, some few Flowers will, perhaps, appear in *September* following, naked, or without any green Leaves ; and about the End of *September* or Beginning of *October*, the green Leaves appear and shoot to a good Length : Then with an Hough, whose Blade is about three Inches wide, cut the Weeds which appear among the Plants ; but the Leaves which hold their Greeness all the Winter and part of the Spring, should not be disturb'd, for that weakens the Root. Hares are great Lovers of them, and therefore the Country People are oblig'd to fence in their Saffron Grounds with Hurdles, or other good Fence, to keep the Hares out.

The next Year after planting we may expect about a third or fourth Part of what they esteem a full Crop ; and this Year, as soon as the green Leaves are quite decay'd, clean the whole Ground with an Hough, which will greatly help the Roots.

The third and fourth Years with this ordering, we may expect full Crops ; but then the Roots and their Offspring must be taken

taken out of the Ground to make fresh Plantations; an Acre of Saffron-Roots of this standing, will plant about Three Acres and half.

When the Saffron comes to flower, the Blossoms must be gathered very early in the Morning, because, as I observed before, the Stile or Pistilum, which is the pure Saffron, shrinks at the approach of the Sun: therefore in great Saffron-Grounds, all the Hands they can get are employ'd to pick it every Morning while it lasts in Flower. We must understand that 'tis only the Stile of the Flower which is the Saffron, the other Parts are of no use; and I am very apt to believe there may be good Saffron gathered from the blew Spring Crocus, for there is little or no difference in the Flowers of one or the other sort; and if so, the Spring will bear a tolerable Crop the first Year of Planting.

As they gather the Saffron, they put it between Sheets of White Paper, and dry it on little Kilns, which every one is provided with; and the Fire they use on this occasion is Charcole. At *Littlebury*, near *Walden*, the Method of Drying it may be best seen at the Flowering Season; for there is so much an Art in it, that barely by that means, some Saffron is Five or Ten Shillings *per* Pound better than other.

About Three Pounds of fresh Saffron will dry to about one Pound; and I have known sometimes the Years Crop gather'd from one Acre, to amount to near Eighteen Pound weight; but Ten Pound upon an Acre is common enough. The Price it will bear in the Market depends upon two things besides

Engrossing ; *first*, the Plenty of it in the Market, and *secondly*, upon the good Management in Drying it. As to the Quantity of it, which is some Years more, and some Years less, that is occasioned by the greater or less number of full-cropt Acres which happen to be on foot at one time more than another : for above Four Years it must not stand in a Place, but the Ground broke up ; and therefore it would be best ordered to keep a parcel of Lands so planted with Saffron, that the full Crops might gradually succeed one another. But if the blew Spring Crocus answers the End I propose, the Crop is much more certain, and its Culture still more easie. In dear Years, it has been sold for upwards of Five Pounds *per* Pound, and in some Years for a Guinea ; but however it be, the Cultivator is still a Gainer by it.

I have here given you all that I can at present think of, concerning the manner of Propagating of Saffron ; and shall proceed to answer the other Part of your Letter, relating to the Native Places of the several Tribes of Fruits cultivated in our Gardens.

I shall begin with *Cherries*, which were not known in *Europe* till *Lucullus* had overcome *Mithridates*, King of *Pontus*, *Ann. Rom.* 683. at which time *Lucullus* first brought them from *Pontus* into *Italy*, but were not till an Hundred Years after brought into *Britain*, as the great Sir *William Temple* observes in his Writings. This *Pontus* is a Province in *Asia Minor*, between *Bithynia* and *Paphlagonia*, thus called because it lies all along the *Euxine* Sea, whose Capital City was *Heraclea*. The
late

late Mr. *Vernon*, a Person of extraordinary Curiosity in these Matters, has given an Account in a Letter which he sent from that part of the World, that near the *Black Sea*, there was a Town named *Cheresium*, or *Chireesium*, about which Cherry-Trees grew wild, and he supposes they might take their Name from thence; its Latitude is about Forty three Degrees *North*, which is about Eight Degrees and a half more *South* than *London*, where Cherries grow very well without Shelter; or even as far as *Edinburgh*, they are cultivated with good Success. Now the Latitude of *Edinburgh* is Fifty six Degrees Five Minutes; so that here is one Instance of Plants which will bear with Change of Climate about Thirteen Degrees.

In the next place it is observ'd by Sir *William Temple*, that after the Conquest of *Africk*, *Greece*, the lesser *Asia* and *Syria*, were brought into *Italy* all the sorts of *Mala*, which we interpret Apples, and might signify no more at first.

The Apricots coming from *Epira*, were called *Mala Epirotica*. Their Peaches from *Persia*, *Mala Persica*. Citrons from *Media*, *Mala Medica*. Pomgranats from *Carthage*, *Mala Punica*. Quinces from a little Island in the *Grecian Sea*, *Mala Cathonea*. And their best Pears were brought from *Alexandria*, *Numidia*, *Greece* and *Numancia*, as appears by their several Appellations. Their Plumbs from *Armenia*, *Syria*, but chiefly from *Damascus*.

We are inform'd by the same great Author, that the Fruits of *Rome*, in about an Hundred Years,

Years, came from Countries as far as their Conquests had reached, and made their great Advances in *Italy* about the *Augustan* Age.

But let us examine now the Climates they severally came from, that we may the better know how to place them in our Gardens, and begin with the *Mala Epirotica* or Apricot, which was brought from *Epire*, or *Epirus*, a Province in *Greece*. It was separated from *Macedon*, by the River *Calydnus*, and Mount *Pindus*; their Chief Cities were *Lerta*, *Bestia*, *Preveza*, &c. then the Apricot grew or was esteem'd Natural, about Forty Degrees North Latitude, which is Four Degrees more South or nearer the South than the Cherry. A Gentleman told me about Four Years since, of an Apricot which had a smooth Skin, which came from the Coast of *Barbary*, where I am inform'd this kind of Fruit grows wild; but yet the Degree of Latitude is the same with part of *Greece*, so that its Government in the Garden is the same

Next let us consider the *Mala Persica*, which we mean when we speak of Peaches. They have their Name from *Persia*, but that is so general, that we know not where to fix our Point; for *Persia* extends it self from about Thirty to Forty Degrees; but if we take the Medium of that, then we suppose them to grow all in the same Place: It is about Thirty Five Degrees North Latitude; but it is likely their early sorts grow in Places near the *Caspian* Sea, Five Degrees North from the middle of *Persia*, which is my *Persian* Latitude; and our latest Peaches might come from those Parts towards the *Persian* Gulf, which

which lie above Five Degrees more *South* than the Point I fix for *Persia*: so that there may be Ten Degrees difference of Latitude even in *Persia*, the Peach Country. The difference however, according to the Point I mention, *viz.* the middle of *Persia* and *London*, is above Sixteen Degrees; or if we add Five Degrees more *South*, and suppose Peaches to come from about the *Persian* Gulf, then the Difference between *London* and the Peach-Country is more than Twenty one Degrees. It is certain, that Peach Trees in *Italy* will grow to Sixteen or Eighteen Foot high in Two or Three Years after Planting, without Walls, which shews they love Heat; and our best Walls in *England* will not constantly ripen all the sorts: However, our Catalogue of Peaches furnishes us with so many various kinds, that we have some or other from *June* to *November*, and I therefore fancy their different Times of Ripening happens from the difference of the Climates they were brought from, as I hinted before: For every Vegetable that I know of will, if possible, preserve its natural Time of Spring and Growth, whatever Climate it comes from or is in; if it comes from under the Line to us, it will aim at shooting in its own Season, if we can but keep them alive. But I shall shew these Differences of Latitude more plainly at the End of this Letter, in a Table.

Next the Pomgranate, or *Mala Punica*, is a Fruit which was brought into *Italy* from *Carthage* near *Tunis*, whose Latitude is Thirty three Degrees *North*; 'tis to be supposed, that this Tree, as it was brought from *Africa*,
might

might have its original Place much more *South* than *Tunis*, tho' it would live there ; for I find it very difficult to ripen its Fruit with us: Some, indeed, have been barely ripe in *England*, and several have produced Fruit as large as Golden Renets ; but often fail'd of ripening. In *Capel Gardens* at *Kew* in *Surrey*, and at *Sir Gregory Page's*, *Greenwich*, in *Kent*, they are in the best State ; but tho' they have the help of the best Walls, they are not in the Perfection which would please a Judge of good Fruit ; the sort indeed which I speak of, is the larger kind : But there is some reason to believe from what I have observ'd at *Paris*, that the Dwarf sort would do much better with us, it is so generous to blossom when it is not Ten Inches high ; and upon one Plant which I had presented me of that sort, there were Three Fruit, tho' it was not quite a Foot in height: Mr. *Fairchild* of *Hoxton* has of the sort. They take little Room, and little Care ; and I suppose will bear Fruit very readily with us, because they blossom much earlier than the great sort ; and that they will live in *England* without Shelter, there is no doubt, if they are brought no farther *Southward* than the Coast of *Barbary*. It is observeable in the *French King's Gardens* at *Paris*, they bear without Difficulty in little Pots, but are there shelter'd in the Winter ; but I suppose the reason of that is, because in that Country, the Winters are much more severe than they are in *England*, even so pinching cold, as to destroy their Vines, their Olives and Pomgranats : tho' their Summers are also so violent hot, that
their

their Fruits ripen much better than ours do. So that tho' we have not the Severities of their Winters, we want the Heat of their Summers to bring some Fruits to Perfection.

But to help this Deficiency a little with us, give me leave to offer two or three Conjectures of my own. Let us consider, first, the Manner of the Growth of Fruit; and my Observations tell me, they all follow the same Methods of growing and ripening. When a Fruit sets, it immediately begins to grow till it comes to a certain Period, where it stands still for a Time; and then we may observe, that it is not half so large as it should be when 'tis ripe. Now at the time when the Fruit is stop'd in its growing, I am of Opinion, that the whole Tree is at rest in its Vegetation; for we have many Instances of Trees that have been transplanted at such a Time, and even the Fruit upon them has ripen'd, and they have the following Year produced Fruit in abundance. I have so many Proofs of this, that I would as soon take up a Tree for my own use, at that Time of the Year, as any other; especially since Mr. *Johnston* of *Twitenham* has so judiciously discover'd the Way of planting Trees in Summer.

But in the next place let us consider, that some time after this Stop, the Fruit begins to enlarge it self, and then with some haste comes to ripen, if there is due Heat for it. The sudden Motion may depend upon two Things: First, a fresh Fund of Sap gather'd from the Earth by new made Roots, has only the Fruit to feed for a time before the Shooters

or younger Branches can receive any of it ; and the Body or the Fruit being then spongy, is still better prepared to receive it, and so occasions the sudden swelling of the Fruit: Or it may be the raw Juices coming directly from the Earth, and mixing with those which have had a longer time to filter through the fine Vessels of the Tree, may cause a Fermentation, and from thence cause the Fruits swelling so suddenly ; for Maturation or Ripening in Fruit is no more than a Tendency to Rottenness or Putrefaction, and all Bodies which ferment, naturally putrify when the Ferment is over. It may be likewise a fermenting of these Liquors in the Body of the Fruit which makes it swell, because we have Instances of Liquors which ferment, that take more room than they did before.

But, however, we find it is necessary for these Juices to be assisted by the Sun, or some other Heat, to ripen the Fruit as it should be ; for when there is a Failure of the Sun's Heat, when the Fruit is full grown, the Juices remain raw, and have neither an agreeable Taste nor Flavour ; but when they have a due Share of Heat, the Ferment ceases, their Maturation begins and sugars their Juices, and raises that Richness of Flavour which render them agreeable to the Palate ; and that this ripening of Fruits is a Degree of Putrefaction seems to be not unreasonable, because they become soft by it, and emit a strong Odour, as we find all Bodies do, more or less grateful to the Senses, as they are in different Degrees of Putrefaction.

Where

Where our Climate therefore will not afford us Sun enough to ripen, as well as bring our Fruit to full Growth, they are help'd by Fire, which heightens their Relish and sugars their Juices, as we find by baking and stewing them, some of which are by these Means render'd more agreeable to the Palate, than they would perhaps have been if they had been benefitted by the Sun; for this baking and stewing of them, is acting upon them much after the same manner by Artificial Heat, as the Sun would have done by his Natural Heat: Some of the most disagreeable harsh Pears, by Violence of Heat in Baking, are render'd every way pleasing to the Palate; their sour Juices become sugar'd, their Hardness is softn'd, and their Earthly Smell is chang'd into a high Perfume. When Peaches want natural Heat to ripen, they are much help'd by this Way; for as long as they are possess'd of these two kinds of Juices, which I have supposed to rise in them at the two Seasons of their Growth, 'tis Heat alone they want to meliorate their Taste, and bring them to the desir'd Perfection: And in some Cases, this Heat of the Fire makes a Fruit more delicious than the hottest Sun would have done. The Raspberry, however its natural Taste is to be admired, yet by the help of Fire, is I think, doubly enrich'd.

But the Heat which is used upon these Occasions is rash and sudden, and therefore differs from that of the Sun, which influences every thing by slow degrees; which may be one reason why the baked Fruit, and the Sun-ripen'd Fruit of the same kind, are so different

in their Tastes: Some are pleas'd with a Fruit that has pass'd the Oven; others delight in a Fruit, which ripen'd according to the Rules of Nature, or has a natural Relish. I confess where the last can be in Perfection, I would chuse it before any of the richest Confectures or Preserv'd Fruits. But as we are sensible every Year is not kind enough to present us with every sort of Fruit in good Perfection, let us consider how this Imperfection may be help'd, so as to bring the Fruit, which the Sun sometimes neglects, to a tolerable Goodness, without Baking, Stewing, Sugars, Spices, or such like.

What I shall offer upon this occasion, depends upon an Observation which accidentally fell in my way. At the time of gathering some Winter Fruits which grew in my Garden, I laid two or three sorts upon the Pavement in my Conservatory or Stove for Exotick Plants; under which, in Frosty Weather, a Fire was made every Night, and the Sun's Warmth shut in every Day. The Names of the Pears were *Winter bon Chretien*, Black Pears of *Worcester*, and *L'Epine d'Hyver*; I should say too that some Sand had been spread upon part of the Floor to dry, which Sand saved my Pears from bruising. After about two Months had pass'd, and several Fires had been made under the Floor, for I then kill'd many Plants by too much Heat, I discover'd that some of my Pears afforded a very agreeable Odour, and I cut one of the *Bon Chretiens*, which to my Palate was as good as any of the kind I had ever eat abroad; it had in it the Excellence of a well-ripen'd *Burcé de Roy*.

This

This Instance alarm'd me a little, that a Pear which I had seldom found ripe before the End of *January*, or in *February*, should be ripe above two Months before its time: and I was the more surpris'd, to find that 'twas full as rich in its Flavour, and as melting as any I had ever tasted abroad. I then tried a second and a third, and found them all ready for Eating, and answering the Character of the first: the following Week *L'Epine d'Hyver* was in a condition of Ripeness, and very good; and about *Christmas*, my black Pears of *Worcester* began to rot, but one of them was agreeable enough to eat, in the Opinion of some Gentlemen who tasted it.

In a late Survey of some Papers, this Accident was brought to my Mind, and I then began to think how it might happen; but reflecting that Heat had to do in the ripening of Fruits, either by the Sun or the Oven, I thought necessary to examine what different sorts of Ripeness each of these produced; from whence I concluded, that the constant Warmth of my Stove, by means of the Fires and the Sun, and the warm Air that was continually circulating, was the reason that these Fruits ripen'd much sooner with me, than they did in other Places: And then having some Proofs that Nature ripens Fruits by gentle degrees, I supposed my Pears had been led to this natural Perfection, by a gentle Progressive or continued Warmth; but if the Heat had been sudden and violent, 'twould have been baking, rather than ripening of 'em.

From these Considerations I gather, that if we would ripen Fruit artificially, (I mean
such

such as come late with us) it would be necessary that before the little Autumn Frosts begin to fall, we should shelter the Fruit from them, but not in such a manner as to exclude them entirely from the Circuambient Air, for that helps to feed a Fruit if it be moderate; for as Heat softens and sweetens Fruit, great Cold or Frosts makes it become tough and sour, even tho' it has been soft and sweet before.

When the Fruit has hung long enough upon the Tree, gather it dry, and tying the Stalk to a Thread, then provide as follows: Take a *Florence-Flask*, or a Glass of that Shape, which should be cut through the Body, and so ordered, with Wood or otherwise, that the two Parts may be set together again at pleasure, the Neck part serving for a Cover to the lower part: This Division must be, that we may get a large Fruit into it; so that it may hang by the Thread, and touch no part of the Glass.

When the Fruit is once fix'd and the parts of the Flask shut together, I wou'd advise it to be set up to the Neck in a Bushel of Bran and Water mixt in a Washing Tub or large Earthen Pan of the shape of a Bushel Measure; and by the Heat of this Bran and Water, which will gently warm the Air that comes in at the top of the Flask, and keep a gentle constant Heat, I suppose the Fruit will ripen; for there is no Heat I know of that is so constant as this, or that can serve in my opinion better for this Purpose. In a Bushel of wet Bran, we may well enough set Five Flasks, and the Heat may be preserved near
Forty

Forty Days. In my *New Improvements* you will find the way of preparing the Bran and Water.

I think it reasonable by this means to ripen some of our late Fruits, for 'tis a warm circulating Air that maturates all Fruits; some may require Twenty, some Forty Days, and some Sixty, according to their Nature. I leave the Mouth of the Flask open, that the Air may circulate: I am now upon the Tryal, and have reasonable hopes of Success; the first Expence is small, and the Glasses will serve for many.

I own I have made a long Digression, and it is high time for me to return to the *Mala Punica*, or Pomgranate, which is the Subject that led me into it. This Fruit was brought from *Carthage* to *Italy*; and in *Italy* it bears and ripens very well, but does not like the *Northern* Parts of *France*, or will endure them without Shelter: So that we have had a few Examples of tolerable ripe Fruit in *England*. Yet to bring them constantly to furnish our Trees with such as may be fit for the curious Palate, I think it would be necessary to find some way to make them spring about Two Months before their Time; the same kind of Walls which his Grace the Duke of *Rutland* has for forwarding of Grapes, would surely do for this Fruit, and bring it to great Perfection; or the Frames of Mr. *Millet's* sort, whereby he brings Cherries to Perfection so many Months before their natural Time of ripening, will also serve this Turn; for *Carthage* is but about Seven Degrees more South than *London*. But by the difficulty of rendring
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this Plant perfect with us, as we do Fruits of the same Latitude of *Carthage*, I suspect it was not a Native of the Country about *Carthage*, but was brought thither from a more Southern Part.

We come now to the *Mala Cathonea* or *Quinces*, which are said to be brought from an Island in the *Archipelago* about thirty seven Degrees Latitude; they grow well with us, but ripen late; I have not heard of any who have try'd them against a Wall, perhaps they might be mended, or else might perhaps be improv'd by my new Proposition for ripening Fruit.

The next is the *Pear* or *Pyrus*, so called from the Pyramedal Form of its Fruit; the best sort of which the *Romans* brought from *Alexandria*, *Greece*, and the Country thereabouts, and if we have any of the same sort now in being with us, I should be apt to conclude that the latter Kinds were brought from the most Southern Places. *Greece* lies about thirty eight and forty Degrees Latitude, and *Alexandria* about thirty.

Plums were brought first to *Italy* from *Armenia*, *Syria*, but chiefly from *Damascus*. *Armenia* lies about the Latitude of forty two, *Syria* about thirty five, and *Damascus* was once the Capital Town of *Syria*, much about the same Latitude I have put down for *Syria*.

The *Mala Medica Citrons*, according to the best Authors, and were so call'd because they were brought from *Media* an antient Kingdom in *Asia*, into *Italy*. *Media* lies in about forty Degrees Latitude.

To

To conclude, I shall give you the Table I promis'd; for I think there is no room to doubt that the several Parts of *Europe* were furnish'd with the Fruits I mention, from *Italy*, as has been said before: And 'tis highly probable, that the *Romans* furnish'd themselves with them from the Places which are named.

Latitude of London, and Walls with the longest Sun.	English Names of Fruits.	Roman Names of Fruit.	Names of the supposed Native places of the several Tribes of Fruit.	Latitude of these Places.	No. of degrees these places are more S. than London.
<i>London</i> , Lat. $51\frac{1}{2}$.	Apricot.	Mala Epirotica.	Epirus in Greece.	about 40 Deg. N.	$11\frac{1}{2}$.
ditto. $51\frac{1}{2}$.	Peach.	Mala Persica.	about the middle of Persia.	about 35 Deg. N.	$16\frac{1}{2}$.
ditto. $51\frac{1}{2}$.	Pomgrate.	Mala Punica,	Carthage, about Tunis, in Africa.	about 33 Deg. N.	$18\frac{1}{2}$.
dit. $51\frac{1}{2}$.	Pear.	Pinus, Pyrus.	Alexandria.	about 30 Deg. N.	$21\frac{1}{2}$.
			Greece.	about 40 Deg. N.	$11\frac{1}{2}$.
dit. $51\frac{1}{2}$.	Plum.	Prunus, or Prunum.	Armenia in Asia.	42 Deg. N.	$9\frac{1}{2}$.
			The middle of Syria in Asia.	about 35 Deg. N.	$16\frac{1}{2}$.
			Damascus.	about 34 Deg. N.	$17\frac{1}{2}$.
dit. $51\frac{1}{2}$.	Citron.	Mala Medica.	Media in Asia	about 40 Deg. N.	$11\frac{1}{2}$.
dit. $51\frac{1}{2}$.	Quince.	Mala Carthonea.	An Island so called in the Archipelago.	about 37 Deg. N.	$14\frac{1}{2}$.
dit. $51\frac{1}{2}$.	Cherry,	Cerasus.	Pontus by the Euxine Sea.	about 40 Deg. N.	$8\frac{1}{2}$.

From the foregoing Table, you may judge what Situation is most proper for bringing the Fruits named there to the best Perfection in our Climate, and likewise which Sorts may most require artificial Heats to help them. Thus, Sir, in the best way I can, I have answered yours dated *September*, and remain

Your most humble Servant,

R. BRADLEY.

Since my writing this Letter, I have been perswaded to add the following Observations concerning the Names of the respective Tribes of Fruit Trees, as the *Botanical* Authors have given 'em to us.

Of the Cherry, its Names, &c.

THE Cherry-Tree is called in Greek *κεράσιον*, and the Fruit, *κεράσιον*; in Latin, *Cerasus*, and *Cerasum*. *Athenæus* and *Pliny* agree with the Account given of this Fruit in the foregoing Letter, and make it derive its Name from a Place called *Cerasumta* in *Pontus*.—The *Arabians* call the Cherry *Sarrafie*, the *Italians* *Ciregie*, the *Spaniards* *Cerasas*, and *Guindas*: The *French* *Cerises* and *Guines*: The *Germans* *Kirschen* and *Kirschen*; and the *Hollanders* *Kriken*. We have now in *England*, about ten Sorts which may be found in the Nurseries about *London*.

Of the Peach and Nectarine.

THE Peach is called in Greek, *περσική μηλιά*, *podákhna*, and by some in Latin, *Malus Persica*, and *Malus Rhodacina*; the Arabians call the Peach *Sauch* or *Chauch*; the Italians call it *Perfiche*, the Spaniards *Pexigos*, the French *Pesche*, and by the Germans, the Peach-tree is called, *Pfeschbaum*; and by the Hollanders *Perceboom*. We have now about Thirty Sorts in our *English* Catalogues; but some private Gentlemen have raised divers Sorts from the Kernel, which are yet new to the Nurseries. With this I might place the Nectarine, or smooth-coated Peach; for there is not Difference enough between the Nectarine and Peach to make them two Families, in my Opinion, as *Mathiolus* and *Cæsalpinus* seem to do, by calling the Nectarine *Nucipersica*, or *Auguilaria Persica Nux*; and *Pliny*, *Nuci Prunum*. We have about Four or Five Sorts of the Nectarines very good in our *English* Catalogues. The Nectarine, I think, may very well be placed with the Peach; because every Part of the Seed, which I chiefly judge by, is like that of the Peach, as indeed are the other Parts of the Plant.

Of the Almond.

THE Almond has many Parts not unlike a Peach; notwithstanding the various Descriptions some of the Antients have given of it, it is not more distant from that Tribe

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than the Nectarine, nor perhaps so much; they have made it a Nut, because the Kernel is edible, and the fleshy Part not to be tasted like the Walnut, or eaten with Pleasure like Peaches: But there are some Peaches in our Catalogues, whose fleshy Part is little better in their Taste and Flavour, tho' their Case is more fleshy than the Green Covering of the Almond; and then for ought I know, the Kernel is more like that of the Almond. The Kernels of the best Peaches are bitter, and it is yet uncertain, whether the Kernels of the worst Peaches are not sweet; and I believe that that Uncertainty may be owing in some measure to the Badness of the Peaches, for unless a Man eats the Peach, he will seldom come near enough to the Stone to break it; and if the Flesh of the Peach be not good, he lays it aside at the first Taste, and considers it no further. Of the Almond, we have several Sorts, whose Nuts differ in their Figure and Taste. It was a Query put by an Acquaintance of mine lately, whether this was not the *Persica Nux*, rather than the Nectarine? The Kernels of those Sorts we receive from abroad, are some bitter, some sweet; they are found about *Barbary*, and in Places about the same Latitude. In *Greek* the Fruit is called, *αμυγδαλη* and *αμυγδάλον*, and in *Latin* *Amygdalum*, but the Tree *Amygdalus*. Some are of Opinion, that *Cato* spoke of Almonds when he mention'd the *Nuces Græcæ*, or Greek Nuts; but others rather translate them Walnuts. *Columella* mentions the *Amygdalæ*, and the *Nuces Græcæ*, as different Nuts; but however this be, the Almond is

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now called by the *Arabians* *Jauz*, *Kauz*, and *Lauzi*, the *Italians* *Mandole*, the *Spaniards* *Almendres*, the *French* *Amandes*, the *Germans* *Mandelkern*, and the *Hollanders* *Amandel*.

Of the Plum-Tree and Apricot.

THE *Greek* Name of the *Plum* is very uncertain, because the Description of the Plant, which some antient Authors call *κοκκυμυηλέα*, in some things is different from those *Plums* we cultivate now in *Europe*. *Theophrastus* makes the *Plum-Tree* an *Ever-green*, and I therefore suspect this *Plum* was rather a kind of *Olive*, whose *Fruit* is not much different from a *Plum* in its Make, and the *Olive* is *Ever-green*; or is it not possible that some *Plum-Trees* may be *Ever-green*, tho' we have not seen them? Or perhaps as near a relation between the *Olive* and the *Plum*, as there is between the *Cherry* and the *Cherry-Bay*, or common *Laurel*, which in their *Fruit* resemble one another, tho' their *Blossoms* are differently set upon the *Trees*. The *Olive* brings its *Blossoms* upon *Strings*, the *Plum* in another manner; yet the *Fruit* of both are nearly shaped alike: So the *Laurel* or *Cherry-Bay* brings its *Flowers* in *Spikes*, the *Cherry* in *Clusters*, and their *Fruit* is shaped alike. Now the *Cherry* we know will grow upon the *Laurel*, by being budded or grafted upon it, or the *Laurel* upon the *Cherry*; both which I have seen, and there is no greater Difference in my Opinion, between the *Olive* and the *Plum*; I am perswaded
one

one may be grafted or budded upon the other, with good success.

But whatever is the *καρύμνηλα* of *Theophrastus*, the Latin Name is *Prunus*, and by some *Prunum*; the *Arabians* call it *Anas*, *Avas* and *Hagias*, the *Italians* *Prune* and *Succine*, the *Spaniards* *Prunas*, *Andrinas* and *Amexeas*; the *French* call this Tree *Prunier*, and the Fruit *Prune*, the *Germans* name the Fruit *Pflaumen*, and the *Hollanders* *Pruym*.

Now concerning the *Apricot*, which among the *Romans* was called *Mala Epirotica*, the *Greeks* call it *μᾶλις ἀρμενίαν*; and tho' the *Romans* first found them in *Greece*, it is not improbable that the *Greeks* might first bring them from *Armenia*, as the *Greek* Name seems to declare. Some suppose the *Apricot* to be the *Βαυχονία*, which is rendred by some *Chrysomila*, i. e. *Mala Aurea* or *Golden Apple*. *Malus Armenica* is the most common Latin Name among the *Botanical Authors*; the *Arabians* call it *Mex* and *Mirmex*, the *Italians* *Armoniache*, *Moniache*, *Bachose* and *Grisemele*; the *Spaniards* *Alhivicoques*, *Alvaricoques* and *Alberchigas*; the *French* call this Fruit *Abricot* and *Carmaignoles*; and the *Germans* *St. Johan Pffersiek*. We have about five Sorts in our *English Gardens*.

Of the Pome Granade, or Pomgranate.

THE *Pomgranate* is call'd in *Greek* *ἐγία* and *εγία*, but by *Hippocrates* *σίδας*; some *Latin Authors* call it *Malus Punica*, and *Malus Granata*

nata ; the *Arabians* call it *Kuman* ; the *Italians*, *Malo Granata*, and *Pomo Granato* ; the *Spaniards*, *Granadas* and *Pomanas* ; the *French*, *Pome de Granade* and *Migraine* ; the *Germans* call it *Granatoepffel*, and the *Hollanders* *Granactappel* ; the Flowers of this kind of Tree is indifferently by some call'd *Balaustium*, but others only give that Name to the double Blossoms ; *Hippocrates* has call'd the Fruit $\sigma\delta\lambda\alpha\varsigma$ so the Rinde of that Fruit is call'd $\psi\iota\delta\iota\sigma\iota\varsigma$ and $\sigma\iota\delta\iota\sigma\iota\varsigma$, and in *Latin* *Psidium* and *Sidium*, but more frequently *Malicorium*, or *Cortex Granatorum*. It is thought by some, this Fruit is call'd *Malus Granata* from *Granado*, which now stands where *Carthage* did ; from whence it was first brought into *Europe*. We have now about four Sorts in *England*.

Of the Citron and Lemon.

AS the Citron is a Fruit which has given some Pain to the Antients, in their Character and Description of it, 'tis uncertain, whether the Citrons we now cultivate in our Gardens be the same Sort they observ'd. The $\mu\omicron\eta\lambda\iota\alpha\ \mu\omicron\eta\delta\iota\kappa\eta$, or *Malus Medica* is supposed to mean *Pome Citron*, or *Apple Citron* ; some Fruit of which Sort I have seen ripen in *England*, but the large long Sort is more common with us. *Theophrastus* calls it *Malum Medicum* and *Persicum*, or *Apple of Media* and *Persia*, from which Parts it was first brought into *Europe*. The *Italians* call this Fruit *Cedri* and *Citroni* ; the *French*, *Citrons* ; the *Germans*, *Citrinoepffel* ; the *Hollanders*, *Cit-*
green.

tree. To this Tribe belong the whole Race of Lemons, which is very numerous, and bring very good Fruit with little Care. I have gather'd both Citrons and Lemons from my own Trees, which were as good as those we receive from Abroad ; the Trees in my Opinion being more hardy than the Orange.

Of the Quince.

THE Quince is call'd in *Greek* μηλιά κύδωνια, from whence the *Latin* *Malus Cydonia*, tho' some Name it *Malus Cathonea*, from an Island in the *Archipelago*. *Pliny* says, it took its Name of *Malus Cydonia*, from *Cydone*, a Town in *Crete* ; from whence, he says, it first was brought among us : But however it be, there is not Difference enough between the Latitudes of these Places to make any considerable Alterations in its Culture with us. There is one Sort of Quince in *Portugal*, which rejoyces so much in that warm Climate, as to be fit for eating raw as soon as it is taken from the Tree ; and as I am well inform'd, is then a very pleasant Fruit. Perhaps a good South Wall with us might bring that Sort to the same Perfection. But for the generality, Quinces are too harsh in most Parts of *Europe* to be eaten raw, which makes me suspect that some of them might have their Original several Degrees more South than *Crete*, for since we find the Fruit of them meliorated, and brought to an agreeable Ripeness by Fire, which neither our Strength of Sun, nor Time of lying in the
Fruiterie

Fruiterly will bring them to. It is not unreasonable to suppose, they had their Birth in a very warm Climate; for surely there never was any Tree created, that had not all the natural Powers on its Side, to assist it in its Progress to Perfection, and ripen its Fruit with Art; but in *Europe* we find only the Sort I have mention'd above, which has Sun enough to give it full Ripeness, and that kind perhaps, had its Original as my Authors relate. The *Arabians* call this Fruit *Saffargel*; the *Italians*, *Melocotognio*, which is a Corruption of the *Roman* Name *Malus Cathonea*; the *Spaniards* name it *Membrillio* and *Marmello*, from whence it is supposed, the Word *Marmellade* took its Rise; *i. e.* from the Confection made of Quinces: The *French* call it *pomme de Coing*, and from them, perhaps, our Word *Coince* or *Quince*: In *Germany* it is named *Kuttenopffel*, and the *Hollanders*, *Queapple*: It may be, perhaps, that the Sort of Quince which *Columella* calls the *Mustca*, which he says is early, is that Sort which ripens upon the Tree in *Portugal*.

Of the Pear.

AS for the Pear, I have very little to add to what was related of its Original in my Letter to Mr. R. S. but that it is so nearly ally'd to the Quince, that whatever Pears are grafted upon Quince Stocks, come forwarder and ripen much sooner, than those which are grafted upon free Stocks; from whence I still am of an Opinion, that the

Quince had its Birth in a very warm Country, because, as I have observ'd in some Parts of my Works, every Plant, tho' it be transplant-ed several Degrees more into Cold than its first Station was, yet it will keep Time in pushing out its Buds at the Date of its own Spring; and so it is likely the Quince, whose Sap moves earlier than the Pear, comes from a Climate whose Spring is forwarder than where any of the Pears had their Birth. Upon this Occasion I am led to consider, that between *Montpelier* and *London*, there is about three Weeks difference in Point of the Growth, and ripening of Fruit; therefore, if by any Contrivance, we can force our Trees to blossom three Weeks earlier than ordinary, and preserve those Blossoms from the perpendicular Frosts, our Fruit may come to ripen with the *French* Fruit, which grow even as much South as *Montpelier*. But I have some Experiments now on Foot, in order to bring some of our Winter Pears forward, which as they answer my End, shall be communicated. A Gentleman, who is now with me, makes it a Question, whether those Sorts of Pears, which sometimes blossom at *Christmas*, had not their Original in a Climate where the Spring happens at that Time of Year? And it is not unnecessary to observe the Sorts that happen to do so; for every Observation, how trifling soever it may appear at first View, may serve another Time to demonstrate Things of the greatest Consequence.

The Name the *Arabians* give the Pear, is *Humeethe*; and by their knowing this, and some other Fruits, which I have mention'd
with

with Names given by them, I conclude they enjoy those Fruits in the greatest Perfection, for their Country is very hot. I have heard that in *Arabia Felix*, many of the Kinds which I have here specified, are much superior to those of the same Tribe cultivated in *Europe*. The *Arabs* likewise call the Pear *Cirmetre* and *Kemetri*; the *Italians*, *Pere*, and the *Spaniards*, *Pyras*; in *France*, it is call'd *Poire*; in *Germany*, *Bir*, *Biren*, and *Piren*, and in *Holland* *Berre*.

Of the Vine.

THE *Greeks* call the cultivated, or Vine-bearing Vine ἀμπέλῳ οἰνοφόρῳ, which by the *Latins* is named *Vites*, *Vinifera*, and *Sativa*, and *Culta*. The wild Vine is in *Greek* ἀμπέλῳ ἀγρῆα, and in *Latin*, *Vitis Sylvestris*; this wild Sort, if it be the same with that which the *Italians* call *Labrusca*, was growing about three Years ago in *Camden-house* Gardens, now in the Possession of the Lord *Lechmere*. It was planted there by the curious Mr. *Balle*, who had it brought from *Italy*, and I think that Sort is no where else in *England*. The *Arabians* call the Vine *Harin Karin*, or *Karni*; the *Italians*, *Vite Venefera*; the *Spaniards*, *Vid* and *Parra*; in *French*, *Vigne*; in *Germany*, *Weiureb*; and the *Hollanders* call it *Wijngaert* or *Wijnstacke*.

Of the Fig.

THE Fig-tree, as Authors relate, was brought from *Barbary* into *Europe*, and has made a considerable Progress in the South Parts of *France*, in *Spain*, and *Italy*; where, in Length of Time, the Number of Sorts are become as numerous as of any other Fruit. In *Greek*, the Fruit is call'd *σῦκον*, and in *Latin* *Ficus*; the *Arabians* give it the Name of *Sin*, *Fin*, and *Tin*; in *Italy* it is call'd *Fichi*; and by the *Spaniards*, *Hygos*; and the *French*, *Figue*; the *Germans* call it *Feighen*; and the *Hollanders*, *Feigen*. Some Sorts yield excellent Fruit if they are well managed and gather'd when they are full ripe; but the want of Knowledge how to cultivate them as they should be, and to know when they are in Perfection, has hindred their Progress in *England*. To answer the First, I shall give my Reader some Papers which I have lately receiv'd from Mr. Secretary *Johnston* of *Twittenham*, which contain an excellent Method of managing the Fig-tree: And for the Second, which is to know when the Fig is full ripe, I shall follow the late curious Lord *Capel's* Rule; which is, that a Fig, when it has a Drop hanging at the End of the Fruit, is then in full Perfection.

And since I have given some Account of the original Names of the Tribes of Fruits, which are now cultivated among us, and have added such Remarks as I can gather from the *Greek* and *Latin* Authors, concern-
ing

ing the Climate, where each Kind naturally had its Station; I shall proceed to offer some Observations of a very curious Person in *France*, who had long apply'd himself to the Study of Fruit Trees, and had gain'd Knowledge enough thereby to give us not only the Names of the several distinct Kinds, but such Descriptions of the several Sorts, as may point out to us their Mode of Growth, their Shape, their Time of ripening, their Qualities; and has so exactly describ'd the Perfections of every Sort, that from his Remarks, any one may easily know every Sort of good Fruit, and when in Perfection. When the celebrated Mr. Secretary *Johnston* of *Twittenham* gave me these Papers, I confess, I was enamour'd with them; they gave me a pleasing Idea of every Fruit which may be stiled Good, and at the same Time, put it in my Power to oblige a great many, who are Lovers of Fruit, and hitherto could not know rightly where or when to ask for it; for there is nothing more confused at present, among many who profess themselves Gardiners, than the true Names of Fruit; and the Sorts which we have now in *England* are so confounded, especially if they are Foreign, that they have almost lost their original Names, which by little and little have been corrupted, and may be more and more so; as an Instance of it, the Pear call'd in *French* *l'Epine D'Hyver*, has been named by some Gardeners, the *Leaping Diver*; because, say some, the Plants of them which were first brought to *England*, fell out of a Boat or Wherry, into the *Thames*, and the Waterman leapt into the

the Water after them, and therefore this Pear was so call'd : But to prevent such gross Mistakes for the future, as well as the giving us one Sort for another, and at improper Seasons, when Fruits are not in their Perfection by a Month or two. Let us look closely into the following Remarks, which I hope will be such as may help every Lover of Fruit to eat the Fruts of his Garden in their greatest Perfection, and help many of our curious *English* Gardiners to settle the Catalogue of Fruit Trees; for without this is done, many of our best Fruits for eating raw, may be stuff'd among those which are only made tolerable by the Force of the Oven or the Confectionary, or perhaps turn'd out of the Garden as good for nothing. Cases of this Kind has often occasion'd severe Reflections to be cast upon the Nursery Men, who furnish'd the Fruit Trees; when the Fault was not on their Side, but in the Persons who have brought such Fruit to the Table as was not in its due Perfection. I hope then, it will not be my Case, to incur the Displeasure of any one, seeing I propose every ones Advantage, tho' I find it has been disadvantageous to some People to make so bold an Attempt.

The Author, who I shall give to my Reader, writes himself *Jean Merlet, Ecuier*, a Person well known at *Paris* for his great Judgment in Fruit Trees, and long Experience of them. And as near as possible, I shall give my Readers his own Words concerning the Fruits known to him and mention'd by him; but what Remarks I shall
happen

happen to make upon his Matter, I shall distinguish by Comma's in the Margin; and those will be chiefly such as relate to the Difference of Climate between *Paris* and us.

To begin then with our Author; he introduces his Discourse thus, — That he would not have undertaken to have written about the Culture of Trees, or of the several Species of Fruits; but that, among the many Books that have gone Abroad, there is not one Author that points out to us which Kinds are the most to be admired, or worthy our Care. Those Papers which have been printed, have treated in general of Fruits, without telling us which are the best or worst. Their Catalogues of Fruit are full of Names, but their Names do not distinguish their Perfections: Gentlemen therefore, for the most part, who have cultivated Plants from these Lists, either in Espaliers or Dwarfs, have rather stock'd themselves with vast Varieties, than consider'd the Goodness of the Fruit they planted; or as it often has happen'd, the same Fruit under different Names has been cultivated in two or three Places. This obliges me to abridge the common Catalogue, and preserve only the Names of such Fruits as are good with us, and to give their Synonyms, and describe their several remarkable Differences; and moreover to mention such as have not yet been treated of by any Author, or whose Time of ripening or Perfection has not been justly observ'd; without which, Fruits are useless. This Knowledge, in my Opinion, is not unworthy Men of the greatest Quality; and from my Experience,

Perience, and diligent Application to Fruit for many Years, I shall therefore freely lay down what I know of the Matter. The most noble *Greeks* and *Romans* have indulged their Pleasures in the Fruits of *Persia* and *Turkey*: The *Sophy* and the *Grand Seignior*, as well as those Personages who bear the highest Rank in those Empires, have all of them their Gardens planted with the most delicious Fruits; and some Years since, that Curiosity has reacht *France*, where now Persons of the most noble Character and Quality apply themselves daily with the greatest Assiduity, to reason and philosophise upon the pruning of Trees, and to gain Experience in that Art, and the Knowledge of the best Fruits, which every Gardiner does not do; few of them regarding the Strength or Weakness of a Tree, or giving their Mind to consider seriously which Branches should be taken away, which should be shortn'd, or which should be left long upon a Tree, to preserve the Wood strong and vigorous, or the Fruit large and of a high Flavour. *Espalier* Trees must be differently pruned from Dwarf Trees; and again, Stone Fruit requires a Management very different from Kernel Fruit, as I have endeavour'd to explain in few Words at the End of every Chapter, for the Use of the Curious; who, I desire, if they have any better Method of their own, that they would be communicative, and make it known with the same Candour and Sincerity I offer these Papers; which are founded upon Experience, and have often been revised, corrected, and improved, with the Addition of many good Fruits

Fruit which has appeared of late Years among us, such Memoirs would contribute to the Advantage of Gardens in general, and the particular Satisfaction of every one who has the Ordering or Direction of a Garden.

‘ After this ingenious Introduction of Mr. *Ecuier*, he goes on to give us the Names and Descriptions of the several Sorts of Fruits which are most in esteem ; not troubling himself with the Characters of those which are indifferent. And as the Reader takes a Survey of his Performance, he must remember, that about *Paris*, the Summers are much hotter than with us, and the Winters much colder ; and that the late Fruits which he treats in *Espaliers* should be in our Climate rather planted against Walls. I observe Mr. Secretary *Johnston* of *Twickenham*, does not think it below the Rank of some Winter Pears, to allow them the best Walls, and the best Exposure, and consequently has the best Fruit. As I shall have occasion to transpose some of the Chapters of Fruits mentioned by this curious *French* Man, for Reasons which will afterwards appear, I shall here begin with his Observations upon the Fig-Tree, which is in a manner a Stranger to us.



*The Description and Culture of the best
Sorts of Figgs, by Monsieur Jean
Merlet Ecuier.*

THE Fig-Tree seems to have more Wisdom than any other, as it does not bud or shoot till after all severe Weather is past: its Fruit is delicious, and there are many kinds of it.

The first or most early Fig, is the White Fig, called in *French*, *Figue Fleru*; or in *English*, the Fig flower, or Flower of Figs; of this there are three sorts: first, the Large, with a short Stalk a little flat.

2. The Large with a long Stalk.

3. The little *Marseilles* Fig, which is flat, and is a very great Bearer.

These Three kinds are all white without and within the Fruit, they are richly sugar'd and melting, have few Seeds, and bear twice a Year, in the Spring, and in Autumn.

Of these there are some Sorts better and more rare than others; some larger and more melting, and some smaller in Fruit, and lesser Seeds.

4. Next to these is the Yellow Fig, or in *French* call'd the *Angelique*, or *Incarnadine*; which we may interpret, the Angelick Fig, or Incarnation Fig; because of its reddish Colour within-side like the Pomgranate: It brings a large Fruit like the former, which we call the Fig flower; it is given to shoot much, and bear little in the Spring, but in

September

September brings Fruit in abundance, which are rather better tasted than the Spring Fruit, and ripen kindly.

‘ One of these Figs was brought from *Italy*,
 ‘ to *Cambden-House* Gardens, where it grew
 ‘ and prosper’d very well without the help of
 ‘ a Wall.

5. The *Golden* or *Gilded Fig*, or in *French*, *Figue Dorée*, is large and flat; it brings a good second Crop of Fruit, much better in Autumn than in Summer; this Fig is called by some *la Gueuse* or *Begger*, because its Skin tears and cracks when the Fruit ripens.

6. The Flat Violet Fig, or in *French* *Figue Violette plat*, has its Fruit of a middling Size, and brings little Fruit in its Summer Crop; these are supposed to be the Blossoms of Figs, because of their Appearance upon the Wood of the preceding Year: But upon the Motion of the second Sap, or upon the Young Shoots towards the End of the Summer, it bears plentifully: It is melting, and may be rank’d among the best Figs.

7. The Long Violet Fig, or in *French*, *Figue Viole te langue*, is very large; ’tis named by some of the *French* Gardiners *Figuepoire*, or Pear-Fig; and likewise *Figue de Bourdeaux*, which is, *Bourdeaux-Fig*: This is a great Bearer in both Seasons, but hardly ripens its Autumn Fruit; ’tis of less Esteem than the former, being full of large Seeds, which renders its Pulp dryer than the preceding sort; and besides, its Flavour is too rank of the Fig; but ’tis necessary to have some of them, because they ripen in *September*, between the first and second Crops of White Figs.

8. The Green Fig, or in *French*, *Figue Verte*; in *Italian*, *Verdone*; is called likewise by some of the *French* Gardiners, *La Verdalle*, or *Figue d'Espagne*, or *Spanish-Fig*; this Fruit is almost round, always of a Green Colour, tho' it be full ripe, and very Red within-side; it bears little in its first Crop; but the second, that is to say, in *September* and *October*, it brings plenty of Fruit; it is one of the best sorts. Its Wood is less subject to freeze than that of other Fig-Trees, unless that which the *French* call *la Figue d'Automne*, or *la Figue Celeste*; which in *English* may be rendered the Autumn Fig, or Celestial Fig; whose Fruit stands the Winter, and ripens in the Spring, for which reason some call it *Figue d'Hyver*, or Winter Fig.

The Green Fig mention'd above, does very well in *England* without much Care, as I have experienced.

9. The Melinga Fig, or *Figue de Melingue*, is of a Violet Colour, 'tis very long and thin, and red within, and very delicious; it requires the best Exposure, and is very apt to run and drop its Fruit when 'tis near ripe, and 'tis difficult to make it bear for some Years after 'tis planted.

10. The Brugeotte, a Fig so called by the *French* and *Italians*, is pretty large, flat, and of a Violet Colour; 'tis red within, very well tasted, and bears extreamly in Autumn.

11. The Dwarf Fig-Tree, or in *French* *Figuier Nain*, brings short Shoots with Buds very close set; it bears plentifully, and its Fruit is of a Violet Colour, and red within: They are of a pretty large size.

12. The

12. The Bouriageotte Fig is larger than the former, and of a rounder Make ; its Colour is not so deep a Violet ; its Stalk very long and thick ; it bears as little as the others about St. John's-Tide, but brings plenty of Fruit in September ; 'tis a good Fruit, altho' its Seeds are large.

13. The little Mignionne Fig, or in French, *Petite Figue Mignionne* ; is not much larger than a Cherry, and is of a brownish Violet Colour, and very Red within ; 'tis very well tasted, and brings a great deal of Fruit.

14. the Madera Fig, or in French, *la Figue de Madere*, is the black large long Fig ; it produces good store of Fruit, but they ripen with difficulty about Paris, : It requires abundance of Sun, and a very high Wall.

15. The Grey Fig, or in French, *la Figue Grise*, is Greyish on one side, turning a little towards the Violet Colour : 'Tis long and pretty large, and is well enough esteemed.

16. The Genoa Fig, or in French, *Figue de Gennes* ; likewise among some French Gardiners is named *l'Aubicon*, or *la Figue Fievre*, or Fever-Fig ; brings the largest Fruit of any other : 'Tis long and of a brownish Purple Colour, and is shaped somewhat like a *Bon Chretien* Pear, and is excellent. The Leaves are of an extraordinary Bigness ; this sort brings plenty of Fruit in its second Crop, and very few in the first : At Genoa excellent dry'd Sweet-meats are made of this Fruit.

17. The Fig named *Vernisingue*, is almost round and of a brownish Purple, and is esteemed one of the best sorts ; it delights in
much

much Sun, like the rest, which bring their Fruit late in Autumn.

I could yet mention a great Variety of Figs, but these are what I account the best, and my Design is only to speak of such Fruits as are worthy our Care, and reject those which have hitherto crouded our Catalogues to no purpose.

The best or warmest Exposure will much meliorate them; not but most of them will do well almost on any Wall, tho' the Fruit may come somewhat later; for a dry warm Air will ripen them.

The Fig-Tree thrives better in dry than in wet Ground, and hates the Knife; for the first Figs always come upon the extream Parts of the Branches of the preceding Year: but it is good however, to pinch off the Top Buds of the young Branches of the same Year in *June*, because it stops the too free Course of the Sap, and brings the Tree to bear Fruit much earlier in both its Crops

‘ If a Wall Fig-Tree happens to be too full
‘ of Wood, we may about the beginning of
‘ *July*, take out some of the great Branches,
‘ and immediately apply some of the pre-
‘ par'd Mixture warm with a Brush to the
‘ Wound. *Note*, the Mixture is of Bees-
‘ Wax, Rosin and Turpentine.

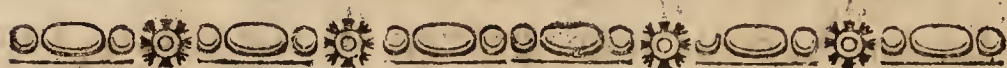
Fig-Trees should be transplanted in *March* or *April*, when the Frosts are over; for Frost is a great Enemy to them: which obliges us to cover many sorts in the Winter, and even to plant some in Cases, to be housed with our Orange-trees; when they are in full Sap, they must be well water'd, for they will then drink a Sea. It

It is also to be observed, that Fig-trees which require Walls, will not be constrained like other Wall or Espalier Fruit, but must have a great share of Liberty; they cannot prosper or bring good Fruit if they are confined; we may indeed fasten the great Stems to the Wall, but it is necessary to let the young Shoots which bear the Fruit, be free and enjoy the Air; the Fruit will ripen better.

The Fig-tree may be inoculated with much better Success than grafted in the Cleft, but there must be great care taken to preserve the Buds when they have taken; during the severity of the Winter we may cover them with Straw. The safest way is to inoculate about the Bottom of the Tree near the Root, which Part is less subject to freeze than the extream Parts. And when it happens that the Fig-trees are so injured by Frosts, that some of their Branches are lost, we must not cut out the dead Wood till the *Midsummer* following: The Fig may likewise be grafted in the Stock or the Bark, and the best way by Aproach, which is the surest way; I have likewise grafted in the Cleft, which has taken very well.

The Fig-tree does not love Culture as most other Fruit-trees; do it covets none at all, or very little; for it is a certain Rule, that the more we dig about it, the less Fruit we have from it; it runs all into Wood, it delights in stony Ground without any Culture; the Wood of the Fig is close set with Buds; which yearly produce Fruit; the Sap of this Tree is too vigorous to want any help

help or any enrichment, but rather is kept to bearing by laying Sand at the Root, which helps to bring the Fruit forward: The Ashes of Lye or Buck Ashes are extremely good to lay at the Roots of Fig-trees and have an admirable Effect; they kill Weeds, warm the Earth, and set the Tree to bearing plentifully that Fruit which is the favourite of our Gardens.



*To Mr. Bradley, concerning a new
Method of managing Pear-Trees,
and of a Water Clock.*

S I R,

I HAVE perused the most Part of what you have written about Gardening, with a great deal of Pleasure; and, I must say, such as have any Curiosity, owe very much to you for what you have published upon that Account. The knowing Part of the World, who value themselves upon Subjects of that Nature, cannot but in Justice have you in great Esteem; and more especially, where they have the Advantage of your Conversation.

There is a Piece of Amusement that I have had at my House several Years, which any Gentleman who hath the Convenience of
Water

Fig. I. is a view of the mill in the summer season.

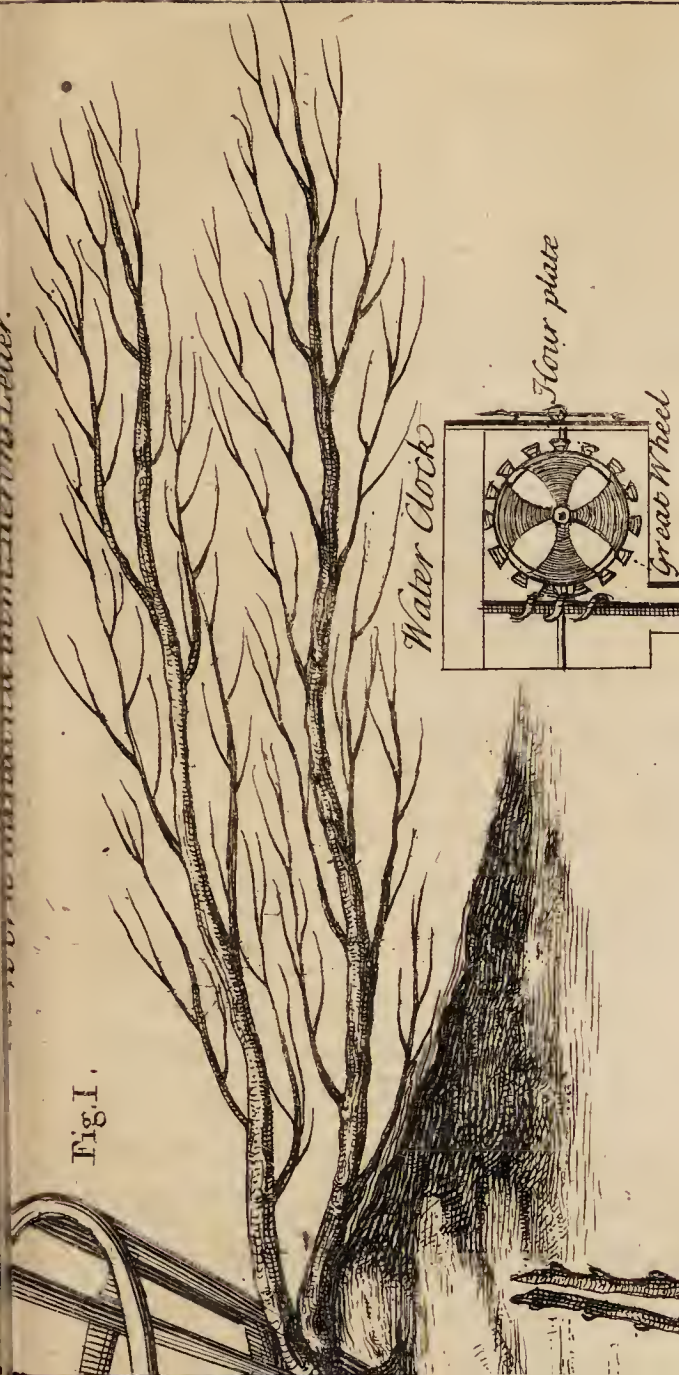


Fig. I.

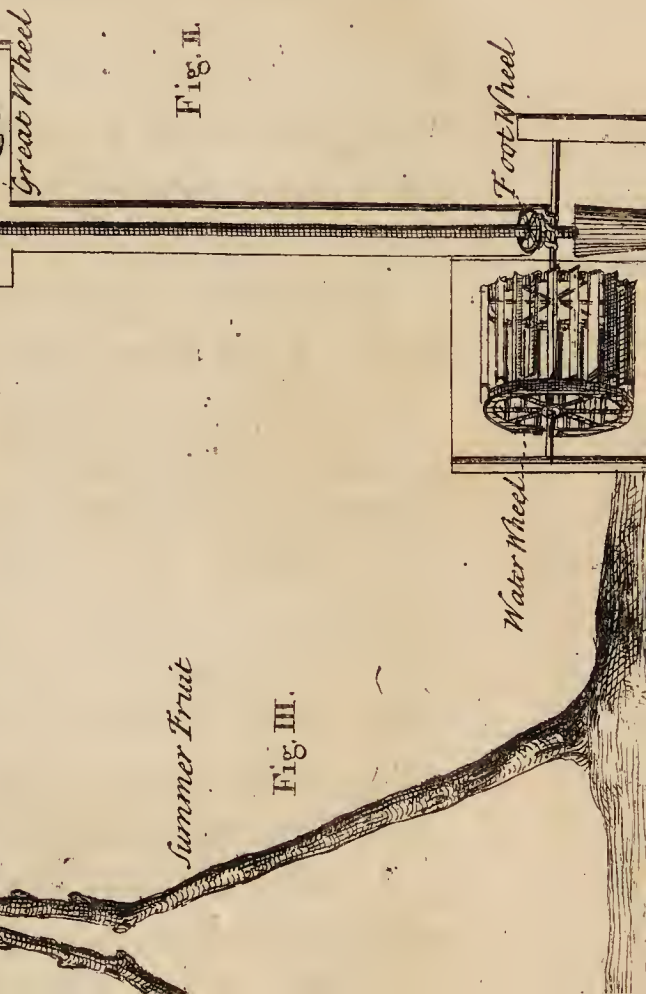
Water Clock

Great Wheel

Flour plate

Summer Fruit

Fig. II.



Water Wheel

Foot Wheel

Fig. III.

Summer Fruit



Water near his Gates, or running through his Gardens, may put up to his Pleasure and Use. It is a Clock that goes by Water, being a perpetual Motion, in regard it needs no winding up. I have known it go a Month together without losing Time; the Water when once truly regulated being very exact. I have sent you herein inclosed the Model of it.

I must acquaint you likewise of a small Piece of Improvement, that I find hath not been put in Practice by any but my self; which is Dwarf Trees trained circular Ways, after the Manner of a Screw; whereby I make a Tree forty Foot long, not to be five Foot high: The Tree being carried round upon a Frame of small Poles, made into a Bell Figure; and as it advances in Growth, is tied gently to the Frame by Pieces of Woollen Yarn, raising it a little as it winds about, and therefore needs no Pruning. This way of training them, consumes the Sap, and makes them very productive; and when the Frame decays, the Tree keeps its Station, and looks very well. If any Shoots offer to spring up in the Summer from any of the side Branches, they must be pinched from the first Beginning; and when a frosty Night threatens them in the Spring, make a plain Frame upon a large Hoop, covered over with a Piece of Canvas, or pitch Cloth, to cover the whole, which preserves the flourishing Buds and their Knitting till the Danger be over, and keeps them also from cold Rains and Winds in the Spring.

I have likewise hastened the ripening of Fruit by a Fortnight, by taking off the Earth from about the Trees near to the Roots, after the Fruit is grown to a Size of Bigness as much as you expect they will come to, and in dry Weather giving them a little watering in the Morning: This Way hath a good Effect upon Vines and early Cherries, or Plums, or the avant Peach. I had Fruit upon Trees used after this Manner, two Weeks, or at least ten Days, before others of their Kind that was not so prepared. Sir, I hope you will pardon my Freedom in communicating what I thought was not yet in universal Practice, being with all due Respect,

Sir,

Your very humble Servant,

A. Heron.

P. S. The Water Wheel of the Clock is about eighteen Inches Diameter, and of the same Form as the Wheel of any ordinary Corn-Mill; its Axletree on the side the Standard is near a Foot long, with a Screw on the End of it, that when it turns, takes in the Teeth of the Foot Wheel, which consists of twelve Teeth. The Axletree hath a Pinion beyond the Screw, where it turns in a small piece of Wood set up for the Purpose. The Standard is five Foot high, with a Gutter cut in two Inches deep, and as much broad; in which turns the Shank of the Foot Wheel,
to

to which it is fixed with a Pinion below the Wheel to move upon, in a little Frame of Iron, as the Pinion it self is to keep it steady in its Motion. There is a Box fixed on the Top of this great Standard, ten Inches Diameter, with a Hole cut out in the Bottom, to let the Shank or Standard of the Foot Wheel go up thorough, and hath a Screw upon the Top of it, with a Pinion in a Frame upon the Top of the Box. This Screw turns a Wheel of sixty Nicks within the Box, and the Axletree of this great Wheel hath a Screw upon it, that turns another Wheel of twenty four Nicks, the End whereof goes thorough, and hath a Pointer fixed upon it without the Hour Plate, like a common Clock. Where you bring of your Water, you cut a square Hole in a Piece of Board, with a Shutter upon it, whereby you give more or less Water, till you bring it to one exact Time. The great Standard must be cut thorough half-way, where the Foot Wheel is to stand, about four Inches wide.

THIS Letter I have receiv'd from Mr. *Heron*, contains so much good Matter in't, that there is large Room for Reasoning. It is the Opinion of our greatest Gardiners, who have studied Philosophically of the Matter, that whatever contributes to check the Sap, does at the same Time bring Fruit upon a Tree, or bring a Tree to bearing much better than by wounding or cutting it. Some Sorts of Pears are given to shoot with too much Vigour, and run to a very great Height before they come to Bearing, and then their Shoots

require a greater Length of Time to be brought to blossom, than such Trees as are less vigorous in their Shoot; and both these should be warily consider'd by the Gardiner, and not let him cut off every large Shoot, because they will not bear at once; for some will not bring Fruit till the third Year, tho' some bear upon the two Years, and others even upon one Years Wood. The want of this Knowledge has very likely been the Reason, why some of our best Pruners have not always had so good Success as one would wish. But to prevent Mistakes which might sometimes happen in Pruning, I see no surer Way than to follow the Method prescrib'd by Mr. *Heron*; for by twining the Shoots of the Pear-Trees about a Frame of Poles, the Sap is so much curb'd, that the Tree may be brought to Bearing sooner than if it was to run at Length; and besides, a Tree so order'd, will take up much less Room than if it was to be managed in any of the common Ways, and there is no Danger of cutting off any of the bearing Wood; and still there is one more Advantage, that such Trees may be defended without much Expence from Dangers while they are in Blossom. I think one may add upon this Occasion, that when the Tree has gain'd the Top of the Poles, we may cut off one of the strong leading Branches near the Root, in order to have new Shoots to be carried about the Frame of Poles, to succeed the old, and so have a continued Succession of Bearers.

Nor is Mr. *Heron's* Method of bringing Fruit to ripen early, less reasonable and beneficial

neficial in the colder Climates; for a Fort-night gained about *Galloway* in *North Britain*, I suppose, puts that Climate nearly upon the same Foot of our *London* Climate; and the same Method used about *London*, may make some of our late Fruits ripen in a *Paris* Climate.

S I R,

BEING an Admirer and constant Reader of those Curiosities you have obliged the World with in your Monthly Observations publish'd the last Year, I thought I could do no less than acquaint you with a Curiosity in an Orchard of my own: We have an Apple in this Country called a Rawling, of which there is a sweet and a sour: The sour when ripe, (which is very early) is a very fair large Fruit, and of a pleasant Taste, inclined to a golden Colour, full of narrow red Streaks: The sweet Rawling, has the same Colours, but not quite so large, and if boil'd grows hard; whereas the sour becomes soft. Now what I have to inform you of is, *viz.* I have a Tree which bears both sorts in one Apple; one side of the Apple is altogether sweet, the other side sour; one side bigger than the other; and when boil'd the one side is soft, the other hard, as all sweet and sour Apples are. What I would be informed from hence, is your Judgment with respect to the propagating of two different sorts of Fruit in one Apple. I assure you this is Fact, without any Equivocation; and if you will be pleased to let me know your Thoughts of it

it, I shall be ready to produce the Man that first (for ought I know) invented it.

I am your very humble Servant,

R. BEAVIS.

In answer to this Letter, I must first say, that I have been told of the same thing often when I was in *Devonshire*, and have had some time to consider of it. I think there may be two Ways of producing the Effect: The first, which seems most natural, may be by the Farina of one Plant entering and impregnating the Blossom or Fruit of another, and thereby making a Seed partake both of the Male and Female Parent; which, according to my Observations on the Generation of Plants, is to me the Reason. In these Monthly Papers, I have mentioned the party-colour'd Grape, the Hermaphrodite Orange or Lemon, which are yet more curious in this way; and I might add the Lime Pregnans, in which Fruit an Orange is enclosed in the Belly or Pulp of the Lemon-fruit, as we are informed from good Hands. But if this is not the Case, then I shall suppose that it may be done by grafting or inarching, as in the third Figure; that is, by chusing two Trees of different sorts, and taking off the Bark on one side from each of them, so that their Woods may be set flat to one another, and bound gently together; it may be perhaps they may unite, and by means of their different Intents, may scatter their different Qualities over the whole Tree, which may appear
mo re

more or less in the several Fruits produced by that Tree : If this sort of inarching shou'd take, one of the Trees should be cut from the other as soon as it has taken. 'Tis however a very great Curiosity, and I should be glad to be certain of the Method used to bring it about, as it would very much improve both Husbandry and Gardening.

To Mr. Richard Bradley, &c.

S I R,

I Have here sent you, according to your desire, my Thoughts concerning the Management of Fruit-trees ; and I shall begin with the Building the Walls. I cannot fall in with the Advice for building them on Arches, because of these following Objections, 1st. If it be a party Wall in the Garden, and is planted on both Sides, the Trees will run thorough and rob one another of their Nourishment. 2. If it be an outside Wall, there are commonly Elms at some small distance planted to break the Violence of the Winds, whose Roots will the easier run thro' and rob the Fruit-trees of their Nourishment ; but if there be not, it is but seldom that we have as good Earth without-side the Garden as within ; and lastly, the worst Inconvenience is, it is an Enticement for the Roots of the Trees to run downright, which is a very great Fault in Fruit-trees ; besides, the Roots can find but little Nourishment under a Brick Wall, where neither Sun nor Showers can come to give the Earth a true bearing Quality. I have seen a Book
in

in Quarto, written by a Fellow of the Royal Society, who has taken some pains, in a Mathematical way, to further the Improvement of Fruit, by building Walls sloping, and has given some great Proofs in his way, of the Advantages attending such a Wall; but I am sure he never made any practical Experiments in this Way, for had he so done, he would have been of another Opinion. I think a perpendicular Wall preferable to any other, or rather hanging a little inward over the Fruit, if it could be conveniently contrived: for when the Sun is low, either in Spring or Autumn, or in the Morning or Evening, then the slope Walls which lean backwards, have but a Glance of the Sun's Power; whereas a perpendicular Wall has its full Rays against it, which is preferable to the greatest Heats of the Sun at *Midsummer* upon one of these back-sloped Walls, for it is the Sun in Autumn we want to ripen our Winter Pears, which require to be kept dry; but against these sloping Walls they cannot, the Dews lying much longer than on the perpendicular Walls; besides, they are much more liable to Blights in the Spring from the white hoary Frosts, and are more exposed to the eddy Winds on all Sides.

What the ingenious Mr. *Laurence* has said concerning the Horizontal Shelters for the safe-guard of the Blossoming Trees, I approve of, and have experienced to be good; but I cannot help thinking that the Tiles he mentions will harbour Vermin; and besides, it is difficult to lead a Tree rightly among them; 'tis therefore I practise another Method

thod to save my blossoming Trees from Frost and cold Dews, which is, to have a couple of Leaves of Deal closely joyned together, and and well painted, and fix Brackets on the Top of the Wall, and have the Deals to take up and down, putting them up in the Spring, when the Trees begin to blossom. These Boards keep off the Rain, Dews and Morning Frosts; and by that means I have seen great Crops of Fruit when there has been hardly any elsewhere: And as to the Height of the Walls, I would not advise them to be above eight or nine Foot at most for Pears; altho' it is the Opinion of most Gardiners, that unless the Wall be twelve Foot high, it is not fit for a Pear; then they plant their Trees so much the nearer, and run the Branches perpendicular, which is a very great fault: First, in planting the Trees so near, they have not room for their Roots to run, which if they were planted twelve or fourteen Foot distant from one another, they would have the same room for the Roots to run as the Branches; and the Branches being carried Horizontally, fill the Wall at Bottom first, and so gradually upwards, till the whole Wall will be well fill'd with bearing Wood: And next, concerning the Disposition of Pears, I would advise all Winter Pears to be planted against the best *South* Walls; I have seen in some Gardens, the best Winter Pears planted against *West* Walls, which I think is a great fault; as for Summer Pears, and some Autumn Pears in Espaliers, where I have had them, they do very well, and for the preparing the Soil, it has been my prac-

tice to make use of fresh Earth from a good Pasture Land, and not to mix Dung and Earth together, and I have found the Success wonderful. Again, I never make my Borders above two Foot deep, but if the Soil be deep or wet, I lay a good quantity of Rubbish to keep the Roots from running down-right; and besides, the Rubbish helps to drain the Soil if it be naturally too wet, and keeps the Roots dry, which is a great advantage to a Fruit-tree. We must also observe that the Roots be well exposed to the Sun and Showers, which is as necessary a Care, as to see that the Branches be well exposed to the Heat. As for the Pruning the several sorts of Pears, I shall not trouble myself nor you with it, you having already given a very good Account: But in the general, I would advise the Pruning to be according to the Strength of the Tree, and to be sure not to Prune too short, which causes the Buds that otherwise would produce Fruit, to shoot all in Wood. What you find here worth transcribing, if you please to give your self the trouble, will much oblige

Yours,

PHILIP MILLER.

By Mr. *Miller's* Letter, we may observe his indefatigable Care to bring Fruits to Perfection, and how much he studies the reasonable Way to manage Fruits. I am persuaded, did every one, who by Education is appointed to follow the Study of Gardening, take as much Care to think in a natural Way as Mr. *Miller*, we might in a short Time come to

to such Knowledge as might extreamly improve Gardening ; and considering the great Satisfaction, which reigns in the Breast of every one, who is either the Inventor or Promoter of good Designs, I am surprized that we have not more People strive to gain that Happiness; for whoever excels in the Art he professes, has the same Right of Honour due to him as a General of an Army deserves, when he has made a Conquest over his most powerful Enemies: and why Husbandry and Gardening, the most antient Studies, should be cultivated without this Ambition, I know but one Thing which looks like a Reason, and that is, because when we have taken a little wholesome Exercise in the propagating of what we design for Perfection, we may give up our selves to Quiet, till the natural Intent of the Subjects we propagate, bring them forward to our Purpose : This for ought I know, may make many of our Practitioners in Gardening, indolent and careless of Improvement ; but should they once be brought to consider, that there are some few, who aim at Improvement, and will be before-hand with them in the Market, if they do not use Diligence in their Studies, I am persuaded it will be Motive enough to forward their Industry, and put them upon making new Experiments, and producing something new and good ; and tho' some of the Tryals we go upon may not perhaps succeed according to our Wishes, yet, as I have often said, we are led by those very Disappointments to a Knowledge of Things, which otherwise would have never enter'd our

Thoughts, and sometimes more advantageous, than if we had discover'd the Thing we sought after; but if one in twenty should only prove profitable, it may well enough pay the Labour and Expence of the rest.

The Experiments which may be made for the Improvement of Gardening and Husbandry, need not be very Expensive, for there is nothing, that I know of, in those Ways, but may be better try'd in little than in a great Compass; let us try in small, and we have more Opportunity of looking after our Experiment, and making our Observations upon it, than when a whole Field or large Garden is concern'd; and I think whenever we set about such Designs, it would not be amiss to keep a daily Account in Writing, of every Alteration which might happen in the Tryal we were upon; for where an Experiment depends upon Length of Time, we cannot sufficiently trust our Memory: I have known a Thing succeed well once, that in many Tryals afterwards could not be brought about, only for want of a just Register of little Accidents and Changes which happen'd during the Course of its Working. The Inconstancy of Season, Variety of Weather, Difference of Soil or Climate, must all be consider'd, and the Nature of the Plant especially.

To Mr. Langley, Nursery-Man at
Twittenham.

S I R,

IT is with great Pleasure I hear of your Design, to provide Sets of Fruit-Trees in the Manner I have directed in my former Works; for I am persuaded it will be of no less Benefit to Gentlemen, who would gain two or three Years in the Growth of Trees, than it will be profitable to your self.

For the first Thought of what I proposed by planting Fruit-Trees in such Cases as might be taken to Pieces, in order to refresh the Earth from Time to Time about the Trees incased, and thereby to keep them in Health, I am oblig'd to the late curious *Samuel Reynardson*, Esq; who had his Cases for Orange Trees so contrived, that the Sides could be taken off at Pleasure; and when his Trees wanted shifting into larger Cases, it was done with little Trouble, and without giving any Check to the Tree.

This Observation led me to the Thought, that Fruit-Trees of any Sort might be planted in Nurseries; in Cases of the like Nature; and be there managed by spreading their Branches upon Espaliers, that they might be at any Time of the Year set against Walls, and even transported to any Distance in a growing Posture, with Fruit upon them; for it is no difficult Matter, when the Trees are brought safe to the Place intended, to
take

take off their Cases, and to plant them without loosening one Grain of Earth from their Roots; and they are always, while they are in Cases, in Readiness to be removed without injuring them. By this Method a Gentleman may have his Walls cover'd in one Day with Fruit-Trees, in a bearing State, and even with Fruit upon them, so that he may be sure of his Sorts; and the Gardener, at the same Time, may have a good Example before him, of the pruning Part, if that has been well taken care of in the Nursery, he cannot than easily err in that Point: And again, what will be advantageous to the Nursery-men who follow this Practice, is, that their Labour and Care of the Management of such Trees in the Nursery, will be in Proportion to the Time the Trees have been thus managed by them; which, in my Opinion, will be worth the Expence of their Time, if they do not make the Prices of such Trees too high.

I am

Your humble Servant,

R. Bradley.

REMARKS *upon the Weather, and Produce of this Month.*

THIS Month began with frosty Weather, which continued till the Seventh, when we had a little Rain; from the Seventh we had cold dark Weather, till the Tenth, and then had some Snow, but did not remain long in the Ground, for the Air grew very moderate for the Season, and we had dark Days till the Nineteenth; at which Time frosty Weather began again to shew it self till about the Twenty eighth Day. The Sky was pretty clear till the Twenty fourth, but from thence to the End the Days were dark and overcast.

We had in this Month, very little more to boast of in the Gardening way, but forced Asparagus; unless it was those Cucumbers which Mr. Thomas Fowler, Gardener to Sir Nathaniel Gould at Stoke-Newington, had in very good Forwardness, and in a promising Condition to be fit to cut in January. For Apples and Pears, such as come commonly at this time of the Year, are not Rarities enough to be taken Notice of; only this may be remark'd of the Pears of this Season, that they were apt to rot, and were more insipid than usual.

End of the Month of December!

A GENERAL
T R E A T I S E
O F

Husbandry and Gardening,

For the Month of *January.*

CONTAINING

Such Observations and Experiments as
are New and Useful for the Improve-
ment of Land.

W I T H

An Account of such extraordinary In-
ventions, and natural Productions, as
may help the Ingenious in their Stu-
dies, and promote universal Learning.

*To be continu'd Monthly, with Variety of
curious CUTTS.*

By R. BRADLEY, *Fellow of the
Royal Society.*

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Printed for J. PEELE, at Locke's Head, in
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(Price One Shilling.)

REVISED

THE EATERS

BY

THEODORE ROOSEVELT

WITH ILLUSTRATIONS BY

JOHN G. BROWN

AND A FOREWORD BY
THE EDITOR OF THE NEW YORK
TIMES

NEW YORK

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125 WEST 47TH STREET
NEW YORK

TO
Mr. *Molyneux*,
THIS
TREATISE
OF

Husbandry and Gardening,

For the Month of *January*,

Is, with the greatest Respect,

Inscrib'd by

His most Obliged

Humble Servant,

R. Bradley.



A GENERAL
TREATISE
OF

Husbandry and Gardening,

For the Month of *January.*



SHALL introduce this Month with some Papers relating to the Culture of Pears, put into my Hands by a very curious and experienced Gentleman; which, I am persuaded, will be of great Use to the Lovers of good Fruit, as well from the Directions given by him, for the Management of the several Sorts in the Garden, as the bringing them to the Table in the best Perfection; and tho' this, to the few who are unacquainted with Fruit, may not seem of very great Moment, or put them to question, where is the Profit or what shall we gain by it? I shall answer, That
the

the Lovers of Fruit are too many to be set aside; they are of all Ranks and Degrees; some have Will and Money to purchase it, others have their Profit by cultivating and selling it; so that I see no Room to suppose, it will not be generally agreeable and useful: For if Men of Fortune will please their Taste this way, they barter their Money against the Fruit; and those who labour to cultivate good Fruit, exchange their Fruit for Money; and it is certain, that whoever brings the best to Market, is the greatest Gainer, which may encourage every one to aim at Excellence; and therefore, I think to advise publickly, what may be a publick Benefit, is not disagreeable to common Sense.

Observations concerning the Management of Pears in Dwarfs, Espaliers, &c. their Names, Qualities, Description, and Time of their Perfection.

THE great Variety of Pears require abundance of Consideration, more than any other Fruit: For altho' I do not take under my Observation the whole Catalogue of them, yet the good Sorts known to me are enough to fill a large Part of my Papers; chiefly because their Culture is not the same for every one. The several Species of these are of very different Qualities; some are melting

melting or butter'd, according to the *French Beurrez*; others are crackling or juicy, and others more dry and odorous. They come in, or begin ripening betimes in the Summer, even in *July*: and from that Date we have Pears that are in Use all the Year; some of the late Winter Pears keeping well, till Nature ripens fresh Fruit for us.

The most early Pears are ripe, or in eating, about the Beginning of *July*. The little Muscat, or *Sept en Gucule*, as some of the *French* Gardiners call it, is the first ripe. 'Tis the best, and of a much richer Flavour than any of the little forward Pears, which are of several Kinds; and there should not be wanting a few of them in a Garden, tho' they last but few Days. The little Muscat brings its Fruit in Clusters, much better in *Espalier* than Standards, or the open Air.

The *Gros Muscat*, or great Muscat, does not bring its Fruit in Clusters like the former, but has the same Flavour. It is larger, and requires likewise the Assistance of a Wall.

Le petit Muscat bâtard, or little bastard Muscat, is also call'd in *French*, *Poire Guenette*, or *Genetting*. It brings its Fruit in Clusters, and bears well in any Situation; but has not the rich Flavour of the two former.

Le Muscat a longue queue, or long stalk'd Muscat Pear, is a good Fruit and agreeable to the Eye. 'Tis pretty large, and is remarkable for its long Stalk. 'Tis a great Bearer.

Le Bourdon Musqué, or muskt Drone Pear, is a large early Muscat. The Fruit is round, high flavour'd, and the Tree bears well. It must

must be eaten a little greenish, being subject to rot in the Heart when 'tis full ripe.

The Hasting Pears, or *Poires Hativeau*, follow the Muscats the first ripe; it bears a round yellow Fruit, of a pretty good Flavour; bears well, and should be eaten before it is full ripe, for it quickly grows meally, and rots like the other Summer Pears.

Le Gros Hativeau, or great Hasting Pear, bears in Clusters, and in abundance. The Fruit is yellow and red, finely painted. It will not keep, and is much better eaten a little green than full ripe.

Le Hativeau blanc, or white Hasting Pear; or as some French Gardeners call it *le Milan d'Esté*, or the Summer Milan Pear, is large, whitish, and so melting, that it bears the Name in some Places of *Burée d'Esté* or Summer Burée.

La Peire de la Magdelaine, or Magdelain Pear, is almost round, rather Green than Yellow; of a pretty good Taste, and large for a forward or Hasting Pear. It grows meally even upon the Tree, if it be too ripe.

La Bellissime, i. e. the fairest, or *Figue Musquée*, i. e. the Musk'd Fig-Pear, is large for a forward Sort; it is call'd *Bellissime* for its great Beauty, being of a fine Yellow streakt with Red. It has a rich Flavour. Its Wood is very large and strong, and its Leaves round, and bigger than ordinary. It is also call'd by some French Gardiners, *Bonne deux fois l'an*, i. e. good twice a Year; for it blossoms about *Midsummer* for a second Crop, and brings that Fruit sometimes to Perfection in

September

September and October. It may be, that it was call'd the Fig-Pear, because of its bringing two Crops of Fruit in a Year, or at least for its attempting to do so.

La Supreme, i. e. the Supreme, or *Poire de Figue*, i. e. the Fig Pear, or *Grosse Jargonelle*, i. e. Great Jargonelle, or Giberish Pear. It is a large long Pear, of a reddish Yellow, its Juice very sweet, and not subject to be Stony; it must not be over ripe for eating, for too much Ripeness makes it meally.

La Cuisse Madame, i. e. the Ladies Thigh, is a good Pear, well known and admired. 'Tis a long Fruit, of a reddish Grey when 'tis full ripe; the Flesh is firm and the Juice very sweet; it will keep some time.

Le Gros & Petit Blanquet, i. e. the large and small Blanket Pears are well esteem'd. The small Sort is by some call'd *Poire de perle*, i. e. pearl Pear; they are of a rich Water, or their Juice, in other Terms, has a rich Flavour: they are both good, are Yellow, and keep pretty well. The Tree has a good Appearance, shoots strong, with very large Leaves. The large Sort is likewise call'd *la Musette d'Anjou*, i. e. the Anjou Bagpipe.

La Poire Admiré, i. e. the Admired Pear, is round like that Sort call'd *Poire Oignonet*, i. e. little Onion Pear; its Juice is extreamly sweet and high flavour'd, and is an extraordinary Bearer.

L'Admiré Joannet, i. e. the admired little John, is less and longer than the former. It is so call'd, because its Time of Perfection is about St. John's Day.

L'Admiré roux de Tours, i. e. the admired Russet of Tours, or *La Poire de Cypre*, i. e. the Cyprus Pear, is the best Pear of this Month, almost round, of a brownish grey Colour. Its Flesh is firm, and its Juice sugar'd and richly flavour'd.

La Poire d'Ambre, i. e. the Amber Pear, or by some call'd *Poire a la Reyne*, i. e. the Queen's Pear, or Muscat Robert, is a small Pear, very Yellow and amber'd, shaped like the Muscat, but larger. Its Flavour is extremely rich, and 'tis a good Bearer; it makes a handsome Tree with yellow Wood.

Le Rousselet Hetif, i. e. the forward little ruddy, or Russet Pear, named also *Perdreau musquée*, i. e. the Musk'd Partridge, is very like the common Rousselet, and is nearly as good, its Juice being very delicious.

Memorandum. I observe, that the Pears mention'd by Mr. Merlett for July, come little later with us, than they do about Paris; there is hardly more than ten Days Difference.

August Pears, &c.

IN August the following Pears are fit for eating, viz.

La Poire d'Espagne, i. e. the Spanish Pear, or by some French Gardiners is call'd *Poire de St Sanson*, that is St. Sampson's Pear; it is large, long shaped, yellow, and melting; it bears abundantly, and should be gather'd before it is ripe, to give it its *buree*, or butter'd Quality. This Pear in some Places, is also call'd *Grosse Cuisse Madame*, i. e. Great Ladies Thigh, and
at

at Orleans is named *Poire de Beau present*, i. e. a Pear worthy to be presented.

La Fargonelle is long, redish, and not so long as the former; it is a little dry and Stony, but has a good Flavour, the Juice being rich and high tasted.

Le Parfum de Pan, i. e. Pan's perfumed Pear, is pretty large, rather long than round, like the Pear call'd in *French* *Sucrè vert*, i. e. Green sugar'd Pear. Its Juice is extreamly sweet and rich in Flavour.

La Poire de Jassemin, i. e. the Jessamine Pear, or *Vilaine de la Ree*, is of middling Size, somewhat longer than round; its Juice is rich, but the Fruit is subject to be stony.

La Grosse Mouille bouche, i. e. the Great-mouth Water-pear, or *Coule Soif*, i. e. Quench-thirst, or as some other *French* Gardiners name it, *le Franc-Real d'Esté*, is a large round Pear, greenish and melting, of a pretty good Taste; but grows meally if it is not gather'd a little before 'tis ripe; the Stalk is thick and short, 'tis a good Bearer.

La Chair d'Adam, i. e. Adam's Flesh, or *la Poire de Prince*, i. e. the Prince's Pear, is not unlike the *Rouffelet*; it has a rose-water'd Juice, very high flavour'd; bears well, and may be kept long enough without rotting, which is too generally the Fault of the Summer Fruits.

La Velée, i. e. the Valley-pear; or *Poire de Liqueur*, i. e. Juicy Pear, is watry and somewhat harsh now and then, so that it is not now so much in esteem as it has been formerly.

La Poire a deux testes, i. e. the double-headed Pear, is crackling, and full of sweet Juice, will keep and ripen well after 'tis taken from the Tree; its Fruit grows very large and good upon Dwarfs.

Le Gros & le petit Oignonet, i. e. the great and small Onion-pears, are musked and high flavour'd, round, flat and Yellow shaped somewhat like Onions; they are subject now and then to be stony, but are excellent Bearers.

Le Gros Rousselet de Rheims, i. e. the great Rousselet from Rheims, is generally allow'd by all to be one of the best Summer Pears: It is butter'd and melting, with a musked Flavour, and brings much larger and fairer Fruit in Espalier than in open Ground.

Le petit Rousselet, i. e. the small Rousselet, is greyer and more russet than the former; it does not rot so soon, and brings its Fruit to good Perfection in a Standard, and by that Method keeps longer, and is better tasted: This Fruit is so much coveted, that we plant it in all manner of Expositions, to preserve it the longer among us. It is call'd about *Anjou*, *le Girofle*, i. e. the Clove-pear.

La Poire Longuinolle, i. e. the Bloody-pear, is rather a Curiosity than valuable at the Table; it is somewhat like the Valley-pear aforementioned, but is red within-side quite to the Core: It shou'd be gather'd before it is ripe, for it is of very short Continuance.

La Poire de Franchipane is small, green and longish; its Juice is extremely sweet and delicate.

La Cassolette, i. e. the perfum'd Pear, or
Friolet;

Eriole ; or in *Poitou* is called *Muscat verd*, *i. e.* Green Muscat; in *Anjou* it is named, *la Verdette*, *i. e.* the Green Pear, or *la Poire de Tasse Ribaut*; it is long and greenish, with a musked Juice, 'tis a great Bearer, and makes a fine Tree; and tho' it is a crackling or brittle Pear, its Flesh is tender: It keeps pretty well for a Summer Fruit.

La Poire d'Admiral, *i. e.* the Admiral-pear, is reddish, rather flat than long, is very Juicy, with a delicate tender Flesh; bears well, and is never stony: 'Tis highly esteem'd.

La Poire de Lombardie, *i. e.* the Lombardy-pear; or by some French Gardiners *la Poire de Milan*, *i. e.* the Milan-pear; is large, long and of a high musked Flavour, being gathered in time a little before 'tis ripe: 'Tis a good Pear with a sugar'd Juice.

La Gros blanc, *i. e.* the great White, is a large Pear, long and slender towards the Stalk, and pretty big about the Head: 'Tis White and very melting; it should be eaten a little before it is ripe, for it decays quickly; the Tree is handsome, with large Shoots and very large Leaves.

L'Odorante Musquée, *i. e.* the Musk Smelling-pear, call'd in some Places *Poire de Baume*, *i. e.* the Balm-pear; likewise, *Poire d'Amidon*, *i. e.* the Starch-pear; or else *Poire de Fourmy*, *i. e.* Pismire pear; and also *Verge d'Or*, *i. e.* Golden Rod; it is longish, very Yellow, dry, and highly perfum'd.

La Brute-bonne, *i. e.* the Good Brute, is thus called, because of the Coarseness of its Flesh; but tis very juicy, sweet and high flavour'd: 'Tis a Green Pear, and should be eaten

eaten betimes; its Wood and Leaves are whitish and farinacious or powder'd.

La Bergamotte d'Esté, i. e. the Summer-Bergamy, or Bergamotte, is called by some, *Bergamotte de Milan*, i. e. Milan-Bergamy; and *Bergamotte de la Beurrere*, i. e. the Butter-woman's Bergamy; 'tis a large green Pear, soft and melting; it is in many respects like the Autumn Bergamy, and has its Particularities which are excellent.

La Fosse Musquée, or *la Bergamotte Greque*, i. e. the Greek Bergamot; which in *Anjou* they call *la Poire Violou*, i. e. the Fiddle-pear; is almost round, yellow and a great Bearer: It is one of the best Pears for plenty of Juice and rich Flavour.

L'Inconnue Chesneau, or *la Fondante de Brest*, i. e. the Melting-pear of *Brest*, is rather long than round: Its Juice good and rich, an extraordinary Bearer, and in some things resembling the double-headed Pear, or *Poire a deux testes*; which is rather rounder and less red than this; it is ill named a melting Pear, for its Flesh is rather brittle or crackling, than butter'd and melting.

La Grise bonne, i. e. the good Grey Pear; or *la Poire de Forest*, i. e. the Forrest-Pear; also call'd *la Crapaudine*, i. e. the Toad-stone Pear; or else *l'Ambrette d'Esté*, i. e. the Summer Ambret; and likewise it is named *la Rude Epée*, i. e. the sharp Sword-pear, because of its prickly Wood; the Fruit is of the Pear-make, neither long nor round; it is of a greyish Colour, a little butter'd or melting, the Juice sweet and pleasant.

Le Musc d'Esté, i. e. the Summer Musk-pear,

pear, otherwise call'd *le Muscat de Savoie*, *i. e.* the Savoy Muscat, or *Poire aux Mouches*, *i. e.* the Fly-pear, or *l'Oignon de Vernon*, or *Vernon's Onion-pear*, is a kind of red Orange-pear, less round than long; it is large and beautifully colour'd with Yellow and Red, it lasts a long Time.

Le poire d'Orange, *i. e.* the Orange Pears, are of several Kinds; *l'Orange Commune*, *i. e.* the common Orange-pear, is small and greenish; *l'Orange Royale*, *i. e.* the Royal Orange-pear, is an handsome large Fruit and very good; *l'Orange Musquée*, *i. e.* the Musk'd Orange-pear is of a flatter Make, and should be eaten before it is full ripe, for it is very subject to rot at the Heart; and so the other Orange-pears should not be suffer'd to hang too long upon the Tree before they are eaten, for they lose their Goodness.

La Poire de Lichefrian, is longish, and of a russet Grey, a great Bearer, and is soft and melting.

La Poire d'Eau rose, *i. e.* the Rose-water Pear, or by some called *Caillorose*, *i. e.* the curled Rose Pear, is Grey and round, the Stalk very short and the Juice sweet, and of a Rose-like Flavour.

Le Muscat d'August, *i. e.* the August Muscat, is call'd *la Poire d'Avarat*, *i. e.* the Averat Pear, or *Poire d'Robine*, or *Poree de la Honville*, *i. e.* the Hanville-pear, or *Poire Royale*, *i. e.* the Royal-pear, is flat and round, and has a hard Flesh The Fruit comes in Clusters, and is of an high musk'd Flavour, and one of the best: There is the great and small of this Sort. This is harder and dryer than the large Kind,

Kind, which has the richest Musk of any Pear.

Le parfum d'August, i. e. the *August* perfumed Pear, or *la Poire de Berny*, i. e. the *Berny*-pear, is longish, large, and of a good Taste. It is greenish and spotted.

La Cramoisine, i. e. the *Crimson* Pear, is a small Pear, a little longish, somewhat like the *Blanket* Pear, but thinner; the Juice is very sweet, and 'tis a great Bearer.

Le Bon Chrétien Musquée, i. e. the musked *Bon Chrétien*, or good Christian, or *Poire sans peau*, i. e. the Pear without Skin, is rounder and smaller than the *Summer Sort*; its Skin is Yellow and its Flesh pretty hard; it is one of the best Pears, and the most in Esteem; its Juice very sweet and delicious. It must be grafted upon a free Stock, for it seldom comes to any Thing upon the *Quince*, and is so fickle, that even tho' it is grafted upon a Pear or free Stock, it lasts but few Years; it thrives better from a Bud, than from cleft Grafting, for the Cion languishes till the Incision is entirely recover'd.

September Pears.

IN *September* the following Pears are fit for the Table, viz. *le Bon Chrétien d'Esté*, i. e. the *Summer Bon Chrétien*, or by some call'd *Gracioli*, i. e. the *Delicate* Pear; it is a large yellow Pear, tender Flesh, full of fine sugar'd Juice, of a longish Make; 'tis a pretty good Bearer, chiefly about the Tops of the Branches, which should not be cut off in
more

more than from those Trees which bear in the same Manner.

La Poire de Salveati, is pretty large, round, and flat, a Stalk long and slender; its Fruit is fair and handsome, of a fine Yellow; 'tis melting, and will keep pretty well; it is one of the sweetest Pears, and may be reckon'd among the best.

La Chambrette, i. e. the *Chambrette* Pear, is large and longish, with a very agreeable melting Flesh; 'tis so named, as being first brought among us by the Marquis of Cambray, the Author of the *Virgouleuse*; some call it *la Chambrette d'Hyver*, i. e. the Winter *Chambrette*.

La Poire d'Ange, i. e. the *Angel* Pear, is somewhat like the *Salveati*; it is flatter and more melting, but has not so rich a Flavour, nor quite so sweet a Juice.

La Poire de Mon Dieu, i. e. the *God's* Pear, is an handsome Fruit, and pretty good, of a yellowish red, and juicy enough, not subject to be stony; it is a very good Bearer, and the Pears ripen upon the Tree at some Distance of Time from one another.

La Poire Rose, i. e. the *Rose* Pear, has a large round Fruit, of an Onion Make; its Stalk is very long and slender, its Flesh is a little hard, it has a *Rose-water'd* Juice, and very good.

La Verte longue, i. e. the long *Green* Pear, is also call'd *Mouille bouche d'Automne*, i. e. the *Autumn Mouille bouche*, or *Autumn Mouth-water'd* Pear; its Fruit is long and of a green Colour when it is ripe, is very melting, and of a very rich Juice, especially when it grows in

such Land as is rather dry than wet ; it thrives better upon a free than upon a Quince Stock.

La Verte longue Suisse, i. e. the long Green Pear of Switzerland, or *Poire Panachée*, i. e. the streak'd or strip'd Pear, has the same Qualities of the former ; its Wood is mark'd with yellow and green, and its Fruit a little strip'd, and even some of its Leaves. I found this Fruit at *Baudeville*, where it was in great Esteem, and a Rarity.

Le Burée Rouge, i. e. the red *Burée*, or red Butter Pear ; it is call'd likewise by some French Gardiners *Burée d'Anjou*, i. e. the Anjou Butter Pear, some Name it *Poire d'Amboise*, i. e. the Amboise Pear. In Normandy it is call'd *Isambert le bon*, or the good Isambert ; it is a large Pear, long, but not pointed, well colour'd ; it is so butter'd and melting, that it well deserves its Character of *Burée* ; its Juice is sugar'd and high flavour'd, and it ripens off the Tree like the other *Burées*, which should be gather'd before they are quite ripe : 'Tis the best Pear of this Season, as the *Rouffelet* is of Summer Pears, and the *bon Chretien* of the Winter.

Le Burée gris, i. e. the grey *Burée*, or grey Butter Pear, comes later than the former, and is tart and more melting ; but the green *Burée* is the least melting of any of the butter Pears, its Juice more flat and its Flavour less rich. To keep the *Burée* a long Time in eating, we must let them hang upon the Tree till they drop, and plant some Trees of them against a Wall, to the Western Aspect.

Le Buree blanc, i. e. the White *Burée*, or by some French Gardiners call'd *Burée a courte queue*, i. e. the short stalk'd *Burée*, but most commonly call'd *Doyenné*, or the Deans Pear, also *Poire de St. Michel*, i. e. St. Michael's Pear, or Michaelmas-pears; by some again, it is call'd *Poire de Nieve*, i. e. the Snow Pear, or *la Bonne Eute*, i. e. the good Graft; it is fair, large and a good Fruit, of a Citron Colour, and is by some call'd *Poire de Citron*, i. e. Citron or Lemon-pear; 'tis very melting.

Le Parfum d' Aust, i. e. the perfumed August-pear; and the *Brute bonne*, are likewise in eating part of this Month.

October Pears.

THE following Pears are fit for eating in October, viz.

The *Messire Jean*, is of several Sorts; there is the White, the Gilded, and the Grey; the white Sort ripens first, has its Flesh more tender than the others, and its Juice less sugar'd; its Whiteness seems to proceed from some Distemper in the Tree; for when the Tree is very vigorous, the Fruit is better colour'd.

Le Messire Jean dore, i. e. the gilded Monsieur John, has a more richly sugar'd Juice than the former, and is not so subject to be stony as the grey Sort which comes later, and will keep pretty well, and has an extraordinary rich Juice; this is one of the best and most ancient Fruits, is in eating all the Autumn Season, when People are, for the most part, in the Country; and therefore one

should have plenty of 'em; the first of these is corruptly call'd in some Places in *England*, the *John Dory*.

La Poire de Vigne, i. e. the Vine-pear, by some call'd *Damoiselle*, i. e. the Lady's Pear, and also *la Longue queue d'Anjou*, i. e. the Anjou Long-Tail; it is round, of a greyish brown Colour, very melting, and of an excellent rich Juice; the Stalk is extraordinary long; the Fruit should be gather'd before it be full ripe, otherwise it grows meally and soon rots.

La Bergamotte d'Automne, i. e. the Autumn Bergamot, is a pretty large green Pear, a little rough Coated, of a flat Make, and very melting; it ripens after 'tis gather'd from the Tree, and then changes its Green to a yellowish Colour; it keeps pretty well.—To bring this Fruit fair and good, and make the Tree give us good Wood, and consequently good Fruit, we must expose it to the rising or setting Sun, and by no Means to the violent Heat of the South Sun, which would canker the Wood, and make the Fruit small and full of Cracks. It seldom answers our Expectations upon Dwarfs; but in that Case the Shoots must be prun'd long, if we expect our Wood well nourish'd and profitable; 'tis one of our best Fruits, but we seldom find enough Trees of them in the Fruit Gardens. The Autumn-pears should always be more in Number than the others, because its Fruit is almost half our Dyet, and is wholesome. We should plant some of this Kind of Bergamot to the setting Sun; the Juice, indeed, will be less perfumed, but the
sweet

weet or sugar'd Taste, which is the Glory of most Winter Fruits will make good the want of the high Flavour. The Water, or Juice of the Bergamot, is the coldest of all Fruits.

La Bergamotte Suisse, i. e. the Bergamot of Switzerland, is scarcer than the others; it is a flat made Fruit, and very melting, streak'd with green and yellow, and its Wood the same; it bears well and covets a Wall, but little Sun. This Pear is no less good than curious, and is the forwardest of the Bergamots, and the very best.

La Bergamotte Musqué, i. e. the Musk'd Bergamot, or *la Poire du Colombier, i. e.* the Dove Pear, or *Poire de Sicile, i. e.* the Sicilian Pear, or *le petit Muscat d'Automne, i. e.* the little Autumn Muscat, is a small dry Pear, very high flavour'd, a great Bearer, and makes an excellent Sweet-meat.

La Bergamotte bâtarde, i. e. the bastard Bergamot, is large and flat, streak'd with Grey, bears like Ropes of Onions, its Flesh brittle, of a pretty good Water, and should be gather'd a little before it ripens.

La Bergamotte tardive, i. e. the late Bergamot, or *Bergamotte de Pâques, i. e.* the Easter Bergamot, is more in Esteem than the former, because of its long keeping, tho' its other Qualities are the same; it is very common in *Anjou*, but very rare about *Paris*.

La belle & bonne, i. e. the fair and good Pear, is a large Pear, long and pointed, of a greyish Red; the Flesh is tender and delicate, but must be eaten just in Time, for it presently decays.

Le petit Oing, i. e. the little Lard Pear, is of a middle Size, almost round, but of unequal Shape, rather green than yellow; it is one of the most melting delicate Pears, and bears very well.

Le Bési d'Hery, i. e. the Wilding of Hery Forrest, is a round yellow rough coated Pear, of a middle Size, better baked than raw, having a Fenel-like Flavour, which is good in baked Pears. It comes from the Lower Brittany, from the Forrest of Hery, from whence it took its Name. *Besy* or *Besier*, signifies Wilding in *Birttany*, *Normandy*, and several other Provinces.

Le Chat brûlé, i. e. the burnt Cat, otherwise call'd *la Pucelle de Xaintonge*, i. e. the Xaintong Virgin, is a little longish and pointed, very brown, melting, and of a rich Water; it presently grows meally.

Le bec d'Oye, i. e. the Goose-bill-pear, commonly call'd *le Martin Sec de Bourgogne*, i. e. the Burgundy dry Martin-pear, is a small Pear, almost round, of a reddish brown; its Stalk is thick and long, it is a little melting, and is well tasted.

La Poire de St. Denis d'Angers, i. e. St. Denis of Angers Pear, is large, fair, long, and yellow; its Flesh is brittle and crackling, and its Juice richly sugar'd; it is much esteem'd about *Anjou*.

L'Amadote, i. e. the Amadot-pear, is flat shaped, yellow, a rough Coat, dry and high flavour'd; it is so call'd from being found first in a Wood in Burgundy, belonging to the Lady *Oudotte*; when it was wild its Wood was full of Thorns, but by cultivating it upon

on Quince Stocks, it looses its Thorns, tho' upon free Stocks it retains them ; but yet upon the free Stock the Fruit is preferable; it has more Juice, and is more melting, and may be placed among the best. This Fruit, as well as other dry and perfum'd Fruits, are much better upon dry Soils, than upon wet and moist Land ; the latter bringing large, but watry and insipid Fruit. Chiefly it should be observ'd, that all of the melting or butter Pears, which seldom are very high flavour'd, should be planted in light Soils ; and it has been an Observation worthy Notice, that the *Buree* Pears, or those that are melting like the Thorn-pear, *l'Echasserie*, &c. are greatly improved by grafting them upon the *Amadotte* ; for the Juices or Sap of the *Amadotte* is musk'd and richly flavour'd ; and the *Burees* or melting Pears which are grafted upon it, are perfumed by it.

Poire St. Francois, i. e. the *St. Francis-pear*, is very large, long, and yellow ; it bakes very well, but is rather too harsh to eat raw.

Poire de Ronville, i. e. the *Ronville-pear*, is large, long, and green ; but grows yellow in ripening ; it bakes well, but is extream good roasted in Wood Embers.

L'Epine Rose, i. e. the *Thorn Rose*, is of two Sorts, the earliest ripe, is rather long than round, and brings a fair large Fruit, intermixt with Yellow and Grey ; it has a strong rosey Flavour. The latter Sort is somewhat like the *Portail*, or *Gate-pear* ; it is flatter, and has less of the rosey Flavour than the forward Kind.

Poire de Lansac, i. e. the Lansack-pear, is also call'd *la Dauphine*, i. e. the Dauphin-pear, comes from a Village named *Haze*; it is a small round, yellow, rough Pear, and one of the most melting Sorts: 'Tis esteem'd one of the best. It holds fit for eating a long Time, even till *January*, if they are gather'd late; for they will hang upon the Tree after the Leaves are fallen, and till the hard Frosts begin; it is likewise call'd *Franchipane d'Autumne*, i. e. Autumn Franchipan, because of its rich sugar'd Juice, but better known by the Name of Dauphin Pear. *Madame de Lansac*, who was Lady of *Hazè*, was Governess to the Dauphin of *France*, afterwards *Lewis the Fourteenth*, and in that Time it was named the Dauphin-pear.

Pears good in November.

IN *November* is fit for eating the *Virgouleuse*, which came from the Village call'd *Virgoulee*, near *Limoges* in *France*, of which Place the Baron of *Chambray* was Lord; so that in that Country it is call'd the *Chambrette*; it is a large long green Pear, which grows yellow in ripening; it is one of the firmest *Burees*, and very good; it lasts fit for the Table a long Time, but must not be kept close, nor laid upon Deal-boards, or Straw, no more than the other *Buree*, or melting Pears, which are apt to take the Taste from any thing they touch: But they may safely be laid upon Shelves made of Oak, or cover'd with Plaister of *Paris*; or else if we have any particular Flavour

Flavour which we would give them, we may perfume Skins of Leather to our Likening, and lay these Pears upon them, they will soon take the Scent we design them. The Tree is one of the fairest of all the Pears, as well for the fine Verdure of its Leaves; as for its plenty of Sap, which pushes forth large and vigorous Shoots; therefore where a Tree dies or languishes, plant a *Vigouleuse* in its Place, and it will soon fill the Vacancy: However one may have too many of them; but what I say is only to inform a young Gardiner, that the *Virgouleuse* will sooner make good a Deficiency in a Plantation, than any other good Pear that I know of.

If we gather this Fruit before it is ripe it is apt to wither; it rather chooses to be cultivated as a Dwarf than in a Standard, for the Fruit is very tenderly join'd to the Tree, and a little Wind breaks it off; and if it hangs too long upon the Tree, it loses of its Excellence, and hardly is brought to melt, but it lasts longer.

We may treat this Sort in Espaliers, or against Walls lying to the East or West Sun, but never to the South, which makes the Tree turn yellow, and cracks the Fruit, neither will the Fruit keep.

There is one Sort which is very rare, the Wood is red, and the Fruit of the same Colour; it is fit for eating somewhat later than the other, and lasts good till *February*. It has the same Qualities of the other *Virgouleuse*, except that 'tis less melting or butter'd. We should graft this rare Sort upon the com-

mon *Virgouleuse*, if we expect the Fruit large and in good Perfection.

L'Ambrette, i. e. the Ambrette, is a round Pear, of a greenish grey Colour, in strong stiff Ground; but is whitish in sandy Land; it is very melting, and of a rich Water. I esteem it one of the best Pears, tho' it is a Wilding, as one may discover by its thorny Wood. It brings better Fruit, being grafted upon the Quince than upon the free Stock; the latter subjecting the Fruit to be stony, and of a greener Colour than the other, as it retains more of the Wilding; but the Quince Stock softens and rectifies it; this Fruit is in high Esteem every where.

La Marquise, i. e. the Marquis, is a large green Pear, which grows yellow in ripening. It is in many Things like the Winter *Bon Chretien*; its Stalk is long and slender, and its Flesh very melting and butter'd, its Juice sweet and richly musked, somewhat sugar'd like the Water of the *Messire Jean* Pear; it makes a good Tree, and bears well; and the Sap is so vigorous, that tis always well furnished with Wood; this Pear is one of the best.

La Poire de Malthe, i. e. the Malta-pear, is by some call'd *Poire de Pretre*, i. e. the Priest's Pear, is almost round, streak'd with grey and brown; its Stalk is thick and short; its Juice sweet, and of a Rose-like Flavour; it holds a long while in eating; and tho' the Flesh be crackling and brittle, 'tis tender and delicate.

La Poire d'Epine, i. e. the Thorn Pear, is Green, and almost of an oval Figure; it has a little swelling near the Stalk, which renders
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that a little fleshy. It turns Yellow in ripening, and is very melting and high musked. I think it one of the best melting Pears we have; especially if it be upon a free Stock, for upon the Quince, the Fruit soon decays. Why it is call'd the Thorn Pear, I can't conceive, for there are no Thorns upon the Tree; the *Ambrette* might rather deserve that Name, whose Wood is very thorny.

By Experience I find the Fruit is much better in light sandy Ground, than in flat heavy Land; for in the latter, 'tis always watry and insipid; and in that Case we should put Sand about the Roots, rather than Dung; for I find, that Sand so apply'd. gives the Fruit a rich Flavour. We should likewise do the same to Peach-Trees, Fig-Trees, and some others, when they are planted in heavy Ground, for tho' in a strong Soil, they bear large Fruit, it is seldom good for any thing.

L'Ebergement is a large Pear, very like the *Franc-real* in Fruit, Wood, and Leaf, and might justly be named the *Franc-real Buree*. Its Juice is sweet, and it is a great Bearer, bringing its Fruit the length of the Shoot, or like Ropes of Onions: This does much better upon a free Stock, than upon the Quince; for upon the latter it is soon meally, and should rather be eaten a little green than ripe. We should observe, that those Fruits which are subject to rot soon, or grow meally, are much mended by grafting upon free Stocks; for the Quince, which brings a dry harsh Fruit, communicates its Harshness

and Dryness to the Fruits grafted upon it; and likewise such Kinds of Fruit should be gather'd sooner than others, before the Sap slackens in its Motion, for then the Fruit dries and rots sooner than those which have had less Time upon the Tree.

Louise-Bonne is a large Pear, of a very long Make, of a Pearl-like Figure: 'Tis whitish and very melting, if we do not eat it too soon. It comes from *Poitou*; the Lady of which Place, was named *Louise*, and had so great an Esteem for this Fruit, that it was call'd the *Louise-Bonne*, or Good *Louisa*.

Le Martin-Sec de Champagne, i. e. the *Champagne* dry Martin-pear, is rather long than round, well colour'd, and streak'd with red and grey. It has a sugar'd and high flavour'd Water, but is a little subject to be stony. It bears abundantly, and is in eating about three Months. 'Tis in high Esteem every where.

Parfum d'Hyver, i. e. the Winter perfumed Pear, is an excellent Pear for baking; 'tis large, round, and well coloured with yellow. 'Tis a good Bearer.

Citron Musquee, i. e. the musked Lemon, or Citron Pear, is almost round, finely colour'd with yellow and red, very high flavour'd and a little dry; but 'tis to be watch'd and taken when it begins to smell, for then its Water is more delicate and soft to the Palate. It is better in moist Grounds, than in dry sandy Places, as are most of the dry perfumed or musked Pears.

La Poire de Jalousie is large, and resembles the pound Pear, but is yellower and more pointed towards the Stalk; its Flesh is so melting

melting, and its Water so richly sugar'd and perfum'd, that with good Reason it may be said to excite Jealousy among the Pears of this Season, as its Name intimates. It should not be too ripe when 'tis gather'd, for else it would be too melting, and keep little; for most of the melting Pears rot quickly, if they hang too long upon the Tree. This Sort upon the free Stock keeps a long Time; but when it is grafted upon a Quince Stock, the Fruit soon decays.

Le Bezy de Quissoy, is a little Pear, almost round, very brown and melting. It was first found in the Forrest of *Quissoy* in *Brittany*, where it is call'd *Russet*, or *petit Burée d'Hyver*, i. e. little Winter *Burée*. Its Water is extremely rich and vinous, preserving still something of the Wilding it was taken from; 'tis an extraordinary Bearer, and brings its Fruit in Clusters.

Le Parfum d'Autumn, i. e. the Autumn perfum'd Pear, is pretty large and long; 'tis very much musked and high flavour'd for one of the *Burée* Race, or such as have a melting Flesh.

Le Saffron d'Hyver, i. e. the Winter Saffron Pear, is by some call'd *Orange de St. Lo*, i. e. *St. Lo* Orange Pear; the Fruit is large and round, of a grey Colour; and its Flesh very melting, and of a yellow Colour; it lasts good a long time, is well esteem'd, and bears very well. It does better upon a free Stock than upon the Quince.

La Rouffeline, is very like the *Martin-Sec de Champagne*, or *Champagne* dry Martin-pear, but is a little more pointed, and yellower.

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The Stalk is very long and slender, like that call'd *Poire de Vigne*, or Vine-pear. It is one of the best *Burées*, delicately musked, like the Pear named *Robine*, which in my Opinion, is the best of the musked Race. It is likely, this Fruit was named *Rouffeline*, because its melting Flesh, and extraordinary musked Flavour is somewhat like the *Rouffelet*. If this Fruit was more constant in its Ripening and Perfection, I should esteem it the best of the Winter Fruits; but some Years it is dry and high flavour'd, and in others, it is melting and of a very different Relish; so that the Palate does not know what to expect from it.

Bergamotte Cressave, is large and flat, of a yellowish grey Colour; the Flesh is very melting, and the Juice richly sugar'd and vinous. 'Tis a rare and excellent Fruit, and brings a great deal of Wood; is much better upon the free Stock than upon the Quince.

Of December Pears.

IN December, the following Pears are in Season.

La Vilandry, or by some called *le Bezy*, is a pretty large Pear, almost of an Oval Shape, and of a Yellowish Colour, very melting and well flavour'd, especially when it grows in light sandy Land; it lasts good a long time, and is a good Bearer, bringing its Fruit in Clusters: The Tree makes a good appearance, the Leaves very long, narrow and pointed; and its Fruit may very justly deserve

serve our Care as one of the best of this Month.

L'Epine longue d'Hyver, i. e. the long Winter Thorn-pear, is by some French Gardiners called *Verte longue d'Hyver*, i. e. the long green Winter-pear, and in some Places the Winter *Mouille Bouche*, is very melting, and of a rich Water, it is somewhat like the Autumn Thorn-pear, but is rather larger and longer, and does not grow meally in ripening: It lasts a long time, and is one our best Pears.

Poire de Satin, i. e. the Satin-pear, is almost round, white and smooth-coated; its Flesh is very melting, and its Water extremely sugar'd, it lasts good three Months, and brings plenty of Wood and Fruit every Year, which is somewhat particular in a Pear-Tree.

Colmar, is a large Pear somewhat resembling the large Autumn Bergamott, but a little more pointed; its Flesh is butter'd, but not very melting, its Juice sugar'd and rich, it bears well and shoots plentifully; it has not been long about *Paris*, [Anno 1690] and is yet pretty rare, but so good a Fruit cannot be long in a few Hands: It lasts the best part of the Winter.

Merveille d'Hyver, i. e. the Wonder of the Winter, is a roundish Pear, but sometimes of an unequal Figure; this is one of the best melting *Burées*, 'tis of a Greenish Colour like the little Bergamott, but is somewhat richer in its Flavour.

Poire Bronzée, i. e. the Brass Pear, so named because of its Colour, is much like a large

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Bon Chretien; it is a fair large Fruit fit for baking, and is richly flavour'd by that means.

La Messire Jean d'Hyver, i. e. the Winter Monsieur John, by some called, *Marion d'Amiens*, and *Poire de ver*, i. e. the Worm-pear, is somewhat like the common *Messire Jean*, but clear and more pointed; it holds good a long time, its Water is richly sugar'd, its Flesh is brittle and crackling, without melting at all in the Month.

La Poire de Mauritanie, i. e. the Moor's Pear; is of a Black Brown Colour, a little touch'd with Red, and a little pointed in its Make: It is called by some *le Sucrin Noir*, i. e. the Black Sugar-pear; its Juice is somewhat like that of the *Messire Jean*.

L'Archduc, i. e. the Arch-Duke's Pear, is round and yellow, resembling the Pears called *Petit Oing* before-mentioned, but is later and much better: It is melting, and has a sweet and agreeable Juice, it is one of our best.

Burée d'Hyver, i. e. the Winter Burée, is called in some Places in France, *le Gatellier*, and *Jenart-pear*; 'tis large and green, of a long oval Shape: Its Flesh is after the manner of the *Burée Race*, but is better baked than raw.

La France Real, or otherwise called in French, *Gross micet*, is a large Pear, almost round, of a yellowish Colour, 'tis one of the best baking Pears: There is a small sort of this which is round and yellow, and very dry, but well tasted; the Kernel is very large, the Fruit is of long last, and the Tree bears well.

Le Milan d'Hyver, i. e. The Winter *Milan*-pear, called sometimes *le Milan rond*, i. e. the round *Milan*-pear, is not unlike the common *Bergamott*, but its Coat less rough.

La Poire de Topinambour, is large, long and yellow; in ripening very like the *Ronville*-pear before described: It is highly perfumed, its Flesh brittle but tender, and its Juice rich.

La Poire de Portugal, i. e. the *Portugal*-pear, is not very large, but is high flavour'd, and very agreeable.

La St. Germain, or as some call it; *l'Inconue la Fare*, is large and long, its Flesh butter'd and melting, like enough to the *Virgoulenſe*; it is an extraordinary Fruit for Goodness and keeping, and holds in eating a long time, so that we shou'd have a good many Trees of it, which make a handsome Appearance and bear well; we owe this excellent Fruit to a Wilding which was found upon the Banks of the River *de la Fare*, in the Parish of *St. Germain*, and altho' it has been grafted and cultivated with all imaginable Care, its Wood is still enclining to be thorny; the Leaves are long and narrow, and seem enclined to shut up like those of an *Orange*-tree that wants Water. Some have disputed whether the *St. Germain* and *la Fare* are not two different Fruits; for my own part, I shall not settle that Point; if there is any difference, I think the *St. Germain* is the smaller, greener, and less melting of the two; but yet the Wood and the Leaves are alike, and in some Years their Fruit is very nearly the same: However, I think the *St. Germain* is worth all the Winter Fruits; it has all the good Qua-

lities of the *Virgouleuse* and none of the bad ones.

La Poire de Naples, i. e. the *Naples-pear*, is yellow, rough coated, flat, and its Flesh of the *Burée* kind; 'tis a great Bearer, its Leaf very long and narrow, and curl'd in a particular manner.

Pears good in January.

DURING the Month of *January*, and the following, the Fruiteries will furnish us with the *Bon Chretien*, which is of several sorts. There is first, the *Bon Chretien doré*, i. e. the Gilded *Bon Chretien*, which is the tenderest and first ripe; then we have *le Bon Chretien d'Auche*, which has no Kernel, or *Sans pepin*; it is the best sort at *Auche*, but not about *Paris*; it colours like the other *Bon Chretiens* according to the Aspect we give it, much better in *Espalier* or against a Wall, than in a Dwarf. As the Insect called the *Tiger* has shewn it self so powerful an Enemy to this Tree, we should not expose fully to the *South Sun*, but rather to the *East* or *West*, which indeed gives us greener Fruit, but they nevertheless ripen well in the House, and come to a good Colour: 'Tis to be observed that in these cooler and moister Situations, this Tree preserves its Leaves green and strong till the end of *Autumn*.

Le Bon Chretien verd, i. e. the *Green Bon Chretien*, has the most Juice, and lasts till *April* and *May*, when it is cultivated upon a free Stock: In ripening it turns Yellow. There is a long and a round kind, but the best

best is of a Bottle Shape. We must be sure not to expose these sorts in too hot a Place, for fear of Insects, and the drying or scorching of the Leaves, which stops the Sap, and hinders the Progress of the Fruit. As a Remedy against the Insects subject to annoy this Tree, we should wash all the Parts of it in Autumn and in the Spring, just when the hot Weather comes in, with fair Water, which one may continue from time to time, as well as watering the Roots now and then: Some boyl Rue, Wormwood and other bitter Herbs to wash their Trees with, but I find fair Water will do alone. There is another way which may be of some use in this Case, which is, to spread a Cloth at the Foot of the Tree about Day-break, and with a tender Brush sweep these Flies down upon the Cloth and destroy them; for early in the Morning, while the Dew falls, they can't take Wing.

We owe this Fruit to *St. Martin*, who brought it from *Hungary* into *France*, at which time the People gave it the name of *Bon Chretien*, i. e. the good Christian.

There is still another kind of *Bon Chretien* of *English* Growth, or at least was brought from *England* into *France*; which might rather be called the *Moor* from its black brown Skin: This is much like the *French* sort in its Wood, Leaf and Goodness; being of a tender Flesh, and a rich sugar'd Water.

To preserve the *Bon Chretien* and other late Fruits, they shou'd be gather'd in fair Weather, when they are very dry, and in the Decrease of the Moon, which makes them keep

a long while without rotting; we may know when they are ripe, by their easy leaving the Tree, which only happens when the Sap is thickned, or is said to be without Motion.

Le gros Burée blanc d'Hyver, i. e. the great white Winter *Burée*-pear, bears a whitish Fruit, long and thick shaped, somewhat like the Winter *Bon Chretien*; it is very melting, and full of a sweet and agreeable Juice.

La Poire de Fribourg, i. e. the Fribourg-pear, is a large fair Fruit, of a yellow amber Colour, its Flesh is crackling, but its Juice is sugar'd and delicious.

L'Orange d'Hyver, i. e. the Winter Orange-pear, is large and round, green upon the Tree, but changes yellow in ripening; Its Juice is sweet and agreeable, and it holds good a long time.

Poire de Prince, i. e. the Prince's Pear, is excellent for baking; It is a large Fruit, of a beautiful red Colour, its Juice is very agreeable, and it is not subject to be stony.

Le petit Muscat d'Hyver, i. e. the little Winter Muscat, is a round yellow Pear, its Flesh is a little dry, but very well tasted.

La Poire de livre, i. e. the Pound-pear, is also called *le Rateau Gris*, i. e. the Grey Rake-pear, is a very large brown Pear, good for baking.

La Poire de St. Francois, i. e. St. Francis's Pear; 'tis named by some *Poire Grillant*, i. e. the Slippery-pear, is very large and long, of a brown Colour: It is excellent baked, having a rich musked Juice, and is never stony.

Pears good in February.

THE Pears fit for the Table this Month, is first, *le Rouffelet d'Hyver*, i. e. the Winter Rouffelet, not much unlike the Summer Rouffelet, but is rather longer, and a little pointed towards the Stalk; it is greener, and has less red in it than the Summer sort: Its Juice is richly sugar'd, and of a Vinous Flavour; the Wood is red like the common Rouffelet, and the Leaves of both are alike.

Le Gros Musc d'Hyver, i. e. the great Winter Musk-pear, is also called, *Orange Musquée*, i. e. the Orange Musk'd-pear, and by some, *Poire Magdalaine*, i. e. the Magdalain-pear, is round and green, but turns yellowish in ripening; its Juice is highly musked, and is one of the best of this Season, tho' the Grain of its Flesh is a little coarse.

La Pastoralle, is a yellow long Pear, its Flesh is melting and extraordinary good, it keeps well, and is in eating a long time; but this as well as others, is better or worse as the Season of its Growth is dry or wet.

Le Martin Sire, is a long Pear green and red; its Juice richly perfum'd, and keeps a great while.

Le Dagobert, is pretty large, long and red, it bakes very well.

La Donville, by some called the *Calot* or *Poire de Province*, is large and long shaped, of a yellowish red Colour, not subject to be stony; it is much esteemed for baking.

Le Bequesne, is long, more pointed, and of a browner Colour than the *Donville*; it keeps well, and is good baked. In the later Season, we must be sure to have a Stock of Pears for baking, roasting or stewing, for they are preferable to raw Fruit during frosty Weather; even the *Bon Chretien* is mended by roasting in Wood Embers.

La Bergamotte d'Hollande, i. e. the *Holland Bergamott*, is a very large, fair round Pear, green, and its Flesh butter'd, but its Juice not so rich as the other Bergamotts.

La Bergamotte Bugy, is by some called *Poire Nichole*, and *Poire du Ministre*, and in *Italy*, *Pere spina*, is a large Pear, almost round, but narrow towards the Stalk; 'tis of a yellowish green, its Flesh butter'd and melting, and keeps well; it is apt to grow musty if it is kept close, and takes the Flavour of any thing that touches it; therefore should have Air, and be kept like the *Virgouleuse*, as I have before directed; it brings excellent Fruit being planted against an *East* or *West* Wall, but does not succeed so well in *Dwarfs* or *Standards*.

Poire de Girofle, i. e. the *Clove-pear*, is round and of a greyish red; its Flesh is firm, and its Juice very sweet and well tasted.

La Stergonette, is of a middle Size, long and brown; its Flesh is after the manner of the *Burée*, and its Juice extreamly rich for a late Pear.



Pears good in March and April.

WE have now the *St. Martial*, which in some Places is call'd *Poire Angelique*, or *la Cristaline*, it is very like the Winter *Bon Chretien*, it is full as long, but hardly so thick; and is as late in eating. Its Juice is sugar'd, and its Flesh tender. 'Tis an half *Burée*, and very well esteem'd in *Languedoc*, and chiefly at *Thoulouse*, by the Name *Angelique*; and at *Bordeaux* is known by the Name of the *St. Martial*.

La Poire de Chaumontel, i. e. the *Chaumontel* Pear, or otherwise call'd *le Bezy de Chaumontel*, which is the Wilding of that Place, which lies near a Town call'd *Luzarche*, in the Way between *Calais* and *Paris*, is a large Winter *Buree*, almost like the Autumn *Buree*, but a little more partaking of the red Colour; it is a melting Fruit, and its Water sweet and rich; 'tis one of the best late Pears. This Fruit was found a few Years ago (*Anno 1690.*) upon a Wilding at *Chaumontel*, which I first grafted upon a *Quince* Stock, and I believe some few Years will render it yet better than it is, if it be well cultivated; I have eaten of it, from its wild Tree, at *Whitsuntide*.

It is to be observ'd, that Fruits ripen sooner one Year than another, which happens from the great Heats, or much Wet falling while they are in their Growth, or ripening State; and we must observe too, that we must not keep them too warm or close in the

the Fruit Chambers. In soft Winters, we should give them all the Air we can in dry Weather, but never open the Windows in damp foggy Weather, for such moist Air disposes the Fruit to rot. I have observed, that in moderate Winters, all Fruit hurry to Maturity or Ripeness, and soon rot, even the *Virgouleuse*, unless it be kept airy, and then holds good; but especially those Fruits which hang long upon the Tree, are the longest lasting; and on the contrary, if Fruits fell from the Tree, or have been gather'd too soon, they soon fade, but then their Flesh has more of the *Buree* in it.

La bonne de Soulers, is a kind of Winter Bergamot, very melting and well tasted; it keeps a long while, and is one of the best:

La Bergamotte de Paques, i. e. the Easter Bergamot, is green, and its Flesh melting; its Juice is as good as that of the Autumn Bergamot.

Poire de Fontarabie, i. e. *Fontarabie Pear*, is call'd *Carmelite musquee*, i. e. the musked Carmelite Pear, by some *Bonne Foy*, and *Gros Muscat de Lion*, or *Gros Romain*, is a large Pear, rather long than round, yellow and tinged with red; its Flesh is never stony; it eats well enough raw, but is an admirable baking Pear.

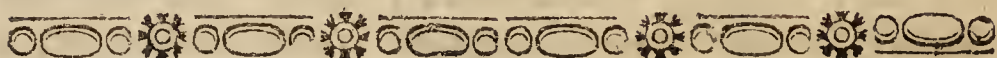
Le Cadillac, is by some call'd *Poire de Pequigny*, i. e. the Pequigny Pear, or *Poire de Citrouille*, i. e. the Gourd, or Pumpkin-pear, or *le Tout-temps*, or Everlasting Pear; is a Sort of a white pound Pear, very large, flat, and white, fit for baking; its Wood and Leaves are likewise very large, and one cannot well
be

be without a Tree or two of it, for the Largeness and Beauty of its Fruit.

There are many other Pears (says the Gentleman that made the foregoing Remarks) which one might mention as fit Fruit for baking; or to follow the Catalogues which have been publish'd, one might use Names which have been imposed on Fruits by Strangers at their Discretion; but that would confound us more than we were before. I am perswaded however, that since the Date of the foregoing Papers *Ann.* 1690, there are many good Sorts discover'd and propagated by our *English* Gardiners; and 'tis to be wish'd, they would consult how, when, and where they had their Original; and sling out such from their Catalogues as are not excellent in their Way; for there is no need, in my Opinion, of crouding a Garden with Unnecessaries, purely for the sake of Variety. A private Gentleman may have Riches enough in a narrow Compass for his Use and Satisfaction, as those of the highest Rank can gather from a Multitude of Acres. A single Person in a little Ground, may find as constant Advantage, as one who has an hundred Acres, and a numerous Attendance and Acquaintance to partake with him of his Benefits.

Our Author is therefore for abridging as much as may be, the Catalogue of Fruits, that we may plant no Sort but what may by their Goodness invite us to regard their Culture; his Judgment passes for the *Burées* and melting Pears, rather than those with brittle, crackling, or *cassant* Flesh; and, in my

Opinion, I joyn with him so far, that if one of the best *Burées* would hold for eating, from *August* to *April*, that Sort alone would answer our End better than the whole Catalogue of Pears to be eaten raw. The Pears with the *Burée* Flesh, says he, which are the best esteem'd, should be cultivated in dry sandy Land, which will prevent them from being stony ; and on the contrary, we should plant the dry, high flavour'd, or musked Pears in moister Soils.



**OBSERVATIONS and EXPERI-
MENTS, concerning manuring, plant-
ing, grafting, and pruning of Pears;
with the best Method of gathering
and preserving the Fruit.**

TH^{O'} we frequently meet with good Instructions concerning the Culture of Fruit-Trees, yet it is observable, that every Day produces some improving Discovery among the Curious. In the Time of my Practice, I have pick'd up the following Remarks, which I think will be of Service to every one who is a Lover of good Fruit, by J. M.

Obser-

Observation I.

IF any Branch in the middle of the Tree, rises with too much Luxuriance above the rest, in full sappy Wood, we must cut it off close to the Body of the Tree ; but with Regard, we do not injure the Bark of the great Wood we take it from ; for such a Wound would endanger the Health of the Tree, the wounded Part would be a long Time recovering, and be subject to canker.

Observation II.

WE likewise must observe, that *Trees should be pruned but once in a Year*, which I know is very contrary to common Practice ; for there are too many People, who are never without their Knife in their Hand ; the continual Pruning makes a Tree shoot into false Wood, and miscarry of its Buds design'd for Fruit ; it interrupts the free Passage of the Sap to such Buds, by diverting it to support the wounded Parts of the Tree, and so we lose the Benefit which would arise from the preparing Buds for Blossom, which otherwise might have been fruitful the succeeding Year. The Reason why Trees shoot more in Wood when they have been largely prun'd, than they did before, is because the Root had fill'd it self with Juices proportionable to the Nourishment its standing Branches required ; but when many of them are cut a-

way, the same Fund of radical Juice goes to the Nourishment of the remaining Buds, that otherwise was design'd to nourish as many more, perhaps: So that then we may suppose, if the Ballance was equal between the Buds cut off, and those remaining upon the Tree, the remaining Buds might just produce the same Weight of Wood, that the Shoots of that Year would have done, had the Tree not been prun'd.

Observation III.

WHEN a Tree is in good Order, we must take Care not to prune it too close, or take away too much Wood within Side, as some are too apt to do, leaving a Dwarf sometimes naked within: 'Tis however necessary to allow Air between the Shoots which come from the Middle, in proper Places, for the better Admittance of the Sun to ripen the Fruit; and in this Case we may remark, that we may allow the Shoots of a Dwarf-Tree more Air in a strong wet Ground than in a light sandy Ground, which by its natural Warmth, gives Colour and Taste to those Fruits, which in wet cold Ground would be insipid and good for nothing.

Observation IV.

THE fourth Observation is, that Winter Fruits should have their Shoots left wider

wider asunder than the Summer Fruits ; the latter not wanting the Sun as the others do, therefore may be left pretty full of Wood. We may likewise remark, in the pruning of Trees, that such as have made weak Shoots, should be pruned betimes, in *January* the latest ; for pruning draws the Sap : But those Trees which are very vigorous, should be prun'd late in the Year, *i. e.* in *April*, or even in *May*, they will bring less Wood and more Fruit.

Observation V.

WE must consider the Climate where we live, that we may direct our Practice according to the Degree of Cold or Heat ; in hot Countries, the Fruit must be gather'd sooner than in the colder Climates, because the Sap has perform'd its Work sooner ; and the contrary in cold Climates, Fruit must hang longer upon the Tree to ripen ; it will keep longer, for with me it is a constant Rule, that the longer Fruit can draw the Sap, the longer it will last ; and it is the same in Nature, when we speak of pruning, or of a Plant, or the Culture of Trees, which we would forward or retard. We should gather Fruit after a Frost, for then we are sure the Sap does not help them.

Observation VI.

IN gathering of Fruits, it should be done with a great deal of Discretion and Patience, taking Care that we do not destroy the blossom Buds which are near them, or are join'd to them; for the Buds are framed for the Fruit of the next Year when we gather our Fruit. Apples are much harder to gather than Pears, being more closely fast'ned to the Tree, and their Stalks much shorter than the Stalks of Pears.

Observation VII.

IN hot dry Years, if the Season is hot about Autumn, *i. e.* in *August* and *September*, our Fruits should be gather'd about the beginning of *October*, rather than leave them upon the Tree till the End of the Month; for such Fruit as has had a large Share of ripening upon the Tree, lasts but little, and is very subject to rot; but if *August* and *September* be wet and cold, then let the Fruit hang upon the Trees till the End of *October*, and they will keep well. This I account one of the most material Observations relating to Fruit, tho' few Gardiners make any Account of it; therefore I would have every Gentleman, who is a Lover of good Fruit, to observe the Course of the Season, and gather his Fruits accordingly; for if this is not regarded, the whole Labour of the Year is useless; all our
Expence

Expenſe and Care is vain ; our Charge and Trouble is to get good Fruit, and if we do not conſider it at the Time of Harveſt, we loſe all. We muſt be likewise careful to know our Sorts, that we may not loſe them in their Season, and without Occaſion ſuſpect our Fruit-Keepers: But without an exact Catalogue of our Fruits and Seasons, we cannot do this ; and I think therefore, if the Name of every Fruit was written upon ſome Board placed over every Tree in a Garden, and the Time mark'd of its Ripeneſs, one might be very eaſy on this Score, and prevent any one that can read, from gathering a Fruit before its Time ; which is too frequently done in Gardens, to the Diſpleaſure of the Maſter, and the Diſtaſte of the Gatherer.

Obſervation VIII.

WHEN a Tree is full ſet of Fruit, and we rather covet ſuch as are fair and good, than a large Number of ſuch as are indifferent, we may with a pair of ſharp Sciſſars cut off thoſe which are moſt weak and ſickly about the middle of their Stalks, which will prevent the weeping or loſs of the Sap: And if the Tree in its firſt or ſecond Sap, tends to ſhoot abundance of falſe Wood, it muſt be pinched off while it is tender, but never cut while the Sap is flowing ; for by cutting the Tree then, it would run into Wood, and the bloſſom Buds, which the ſecond Sap would fill, would thereby be diſappointed and miſcarry. *N. B.* The bloſſom
ſom

some Buds I speak of, are form'd by the first Sap, *viz.* between *April* and *June*, and are fill'd by the second Sap, between *July* and the beginning of *October*, for opening and bearing the following Year.

Observation IX.

BEfore we prune our Trees, we must consider their Strength, and in proportion to that, we must cut them into Shape, as well as for bringing good Fruit. It is an Opinion still prevailing among some People, that if Trees are weak, they must be cut in the Increase of the Moon, to make them give us stronger Wood; and when they are very strong, they must be cut in the Time of the Moon's Decrease, to make them bring abundance of Fruit and less Wood: But let every one use his own Judgment in this Case.

Observation X.

WE find that some Trees are more apt to shoot into Wood-branches than others; when we meet with such strong shooting Trees, we must prune so as to leave the Shoots long, and according to their Strength, let their Shoots remain longer or shorter; but those Shoots which have blossom Buds upon them in any great quantity, must be shortened, that the remaining Buds may nourish their Fruit the better, and the Tree make good Wood.

Obser:

Observation XI.

IT is necessary in the first or second Year after the Tree is planted, to prune very short, to make it shoot or fling into Wood; and if in the succeeding Years, it does not happen to come into a bearing way, but still keeps shooting strong and unprofitable Branches, as is common with the *Rouffelet*, the *Bergamotte*, the *Virgouleuse*, and some others, then if we prune at all, leave every Shoot very long; or rather leave such Trees without pruning, for then the Tree will certainly set to bearing, and the Sap will not spend it self to no purpose; but when those long Branches are knotted with blossoming Buds, we may break off a convenient Number of them, according as those Branches are more or less in strength. Of all the sorts of Pears, there is no one which will bear pruning so short as the Winter *Bon Chretien*; for then it will give large Wood, and upon that we may expect large Fruit.

Observation XII.

ABout May we shou'd begin to top and pinch off the useles or too vigorous Buds of Trees, especially such as are in *Espalier* or against Walls; for then the useful Shoots will be better nourish'd.

Obser-

Observation XIII.

WHen we prune a Dwarf-tree, we must take care that its Shoots and Branches on every side be rightly ballanced, and equal as may be, lest the Winds have power enough over it to strain the Roots, or overset it.

Observation XIV.

WE must likewise take care in the pruning of Dwarf-trees, not to leave any Branches or Shoots too near the Ground; for whatever Fruit comes upon them, has little taste, and quickly rots.

Observation XV.

IN pruning Trees, we must have regard to the Soil and Climate; if it be wet and cold, the Fruit is Green and less in its Colour, and consequently is not so well flavour'd: In this Case the Shoots of a Tree must be pruned free and open, that the Rays of the Sun may pass freely between them; but in light sandy Grounds, where Fruit is always good, tho it is smaller than in the former Lands, the pruning is very different; it should be very little or not at all in Pear-trees; for in very hot dry Land, the Wounds made by pruning recover with difficulty, and in the driest Lands, I have sometimes known Pear-trees to perish entirely by over-pruning.

Observa-

Observation XVI.

WHen a Tree looks Yellow, pluck it up, without troubling your self to prune or amend it with extraordinary Culture; for tho' it may keep alive for two or three Years by judicious Management, it will then be fit for no Use; and if we had pull'd it up at first, and planted a fresh Tree in its Room, we might have had good hopes of Fruit. But if our Case be, that the sick Tree is of a scarce or rare kind, and it is worth looking after, we may lay about the Roots Mud that has been well turned and aired, so that it is become good Mold, and it may recover its Strength; or else Hog's Dung may be used in the same way: It enlivens such Roots, as have been too much burnt and scorch'd by Horse-dung.

Observation XVII.

IF we find that Pears upon Quince Stocks do not thrive in the Place where we have planted them, we must change them for free Stocks; and if those should grow yellow, we may try Apples in their Room; and if we have not then hit upon the Humour of the Soil, we must try other Sorts of Fruit, till we find what will best prosper in it; for unless the Tree and the Soil agree, all our Planting and Pruning is to no purpose.

Observation XVIII.

THE Pear Tree likes to be planted shallow, especially in such Lands as have gravelly or stoney Bottoms; in such Cases we must plant upon the Surface, that the Roots may spread. In great Heats we may lay Fern or Straw over the Roots of Pear Trees, which will help the Tree extreamly in its Shooting.

Observation XIX.

WHEN we make our Plantation, shorten the downwright Roots of the Trees, that the remaining Roots may spread rather than shoot downwards. If the Tree is young, we may leave the Top Root longer, than if it was five or six Years old.

Observation XX.

EVERY curious Person in Fruit, should always keep by him a good Number of free Stocks to help his Plantation with; but such a Nursery should be raised from Kirnels. The Suckers taken from about the Roots of Trees, are good for nothing.

Observation XXI.

WE should likewise provide a Nursery of Quince Stocks, which are best raised from that Sort of Quince whose Wood is the brownest, the Leaves large and round, and velvety on the Back. This Kind brings the strongest Plants, contrary to that which is call'd the Male-Quince; which one
may

may easily distinguish in the Nursery, by its languishing Appearance, and small Shoots. Its Sap is always more sower than the others; and if one was to graff upon such Plants, the Graffs will hardly hold: The best Way is to pull them up, and plant others in their Place.

Observation XXII.

WHEN we graff a young or old Tree where Fruit was not agreeable, we must graff it upon every Arm or Branch as equally as possible; for if we were to leave some of them ungrafted, they would draw away the greatest Part of the Sap, and rob the Graffs, I mean such as are grafted in the Cleft; for budding, or inoculating a Tree, does it no harm; but a Bud will shoot and thrive as well as any other Part of a Tree.

Observation XXIII.

WHEN our Nurseries are compleat, we must take all possible Care, when we are about transplanting our Trees, either for Standards, Dwarfs, or Espaliers, that the Roots are not injured by taking up; the Holes for these Trees must be made as large as possible, and the Ends of the Roots cut very smooth, which will dispose the Tree to shoot the better. Let none of the small Fibres remain, for they are apt to rot and infect the great Roots.

Observation XXIV.

WHEN we plant a free Stock, Quince Stock, or other Wilding in any Place, to be grafted the following Year, take the same Care as you would do in planting the finest Fruit. I know this has been often neglected, tho' it is the Foundation of our Work; and when it has not been regarded as it ought, the whole Design has suffer'd.

Observation XXV.

WHEN we transplant any Tree, observe to plant that Side towards the South, which stood before to the South; and we must do what we can to defend the Wound made by grafting, from the Violence of the Sun.

Observation XXVI.

IN dry sandy Ground plant Trees in Autumn, and in moist and watry Places plant in the Spring; for else the Water lying about their Roots all the Winter, would chill and perish them, especially such as make tender Wood; as Plums, Cherries and Peaches. The Pear and Apple are more hardy in their Wood, but yet more subject to be destroy'd by Water. It is good in moist Grounds to open the Holes for Trees the beginning of Winter, and so let them remain till Spring, before we plant, for the Frost will mellow and enrich the Soil taken out of them, and prepare it for Spring-planting. Where the Soil is light and sandy, and not subject to Inundation, plant your Trees about the beginning

beginning of *November*, and they will gain Fibres enough to support them before the Frosts begin, and will shoot with reasonable Strength the Spring following, and with much more Freedom than those Trees which are planted that Spring. Observe also, that all Trees grafted upon free Stocks, must be planted in light dry Grounds, and the Grafts upon Quince Stocks in strong wet Grounds.

Observation XXVII.

GR A F F those Pears which have a *Buree*, or melting Flesh, upon Quince Stocks, but seldom or never use a Quince Stock for the dry Flesh Pears; for the Juice of the Quince, which is harsh, dry, and rough, adds to the Dryness of those Fruits grafted upon it; but the Share of that Dryness, which the Grafts of the melting Pears can take from the Quince Stock, helps such Fruit in its keeping; for all Fruits which are grafted, are influenced in some Measure by the Juices of the Stocks they are grafted upon.

Observation XXVIII.

IN grafting upon Quince Stocks, we may observe, that the *Portugal* Quince is preferable to any other Kind; its Sap is strong, and the Grafts upon it bring large Fruit. This Sort of Quince has a fair tender Fruit, which in a good Year, may be eaten raw.

Observation XXIX.

I H A V E remark'd in the Way of Graffing, a Curiosity, which 'tis likely may be still new among many Professors of Gardening, and I am perswaded 'twill give them Satisfaction: For Example, if we have a good bearing Tree, which runs so much to Blossom, that the Shoots and Fruit are small ; if we take from the bearing Shoots of such a Tree a few Buds, and inoculate them upon large vigorous Shoots of some other Pear-Tree, such Buds will bear the second Year, and produce very large Fruit, having plenty of Sap to nourish it; or if we put Buds of the less bearing Kinds upon good Bearers, such Buds will so far be over-rul'd by the Nature of the bearing Tree, as to bring abundance of Fruit: But on either of these Occasions, it is necessary to assort our Fruits, and inoculate only Summer Pears upon some of the Pear-Trees of the same Season. Autumn Pears should be inoculated upon Autumn Pears, and so on; but never bud, or graff a Winter Pear upon a Summer Pear, for the Sap of the Summer Pear-Tree will decline before the Winter Fruit can come to its full Growth.

This Method of Inoculating will ease us of the Pain one has commonly, when one comes to fix at any Place, *viz.* whether the Fruit of the Garden is according to our liking ; for when we can have Fruit to our Mind in two or at most three Years, by inoculating the best Sorts upon the old standing Trees, we may be sure of our Sorts without

out waiting till a new Plantation comes forward, and keep our Catalogue just and certain, that we may know when every Sort is in its Perfection ; for without a Catalogue our Fruit-Trees are of little Use, the Pears especially, we run the hazard of murdering our best Sorts, or of giving them to the Hogs ; as an Instance, I have seen *St. Germain* Pears, *Winter Bon Chretiens*, the *Colmar*, and other fine Winter Fruit sent to the Oven in *October*, because they were not then fit for eating raw. So for want of the right Knowledge when a Fruit is fit for the Table, they have rotted in the Fruiterie, and been accounted of no Value. And again, we may add the Necessity of observing how long every kind of Fruit may last good ; for I have known some People very angry with their Gardiner, because the *Burée* Pears did not last all the Winter ; one especially, who had a great many of that Sort, concluded he had been cheated of them, because, as he observ'd, he had as many in Number as might have lasted him half a Year, if he had used a Dozen every Day. I therefore cannot help repeating, how necessary it would be to mark every Fruit-Tree, with the Name of the Fruit, the Time of its Perfection for eating, and how long it lasts good ; which might be painted in Letters at length, upon a square Board, and fasten'd to the Tree ; then would the Master know when to expect the several Fruits of his Garden, and when to make agreeable Presents of Fruit to his Friends, and avoid that too common Censure, which is so often cast upon the best Gardens, of having

no good Fruit in them, because the proper Seasons of the several Fruits were not regarded; the Nursery-men are blamed, the Gardeners suspected, and the Gentlemen dissatisfied, for want of such Precautions.

In some Places, indeed, the Fruit-Trees are number'd, and Catalogues are kept of them; but the Trouble of examining the Number, and from thence running to the Catalogue, incumbers the quiet Thoughts which one would wish for in a Garden; but the Way I speak of would be no Trouble at all.

Observation XXX.

BUT however the inoculating of old Trees may serve for a few Years, we ought to use the earliest Means to interplant them with young Trees, of those which we like best, that they may be in a forward Way of bearing, as the old Trees decay; for a Tree will make us wait its own Time before it comes to bearing; and if we let this Work alone till our old Trees are quite decay'd, we must have a great deal of Patience before our Loss be recover'd.

I shall conclude this Month with the following Letter, concerning some material Points in pruning of Fruit-Trees, and improving barren Lands, by Plantations of Firrs, &c.

Richard Bradley,

BEING a constant Peruser of thy monthly Books, I perceive by these, and thy other

other learned Works, as well as by Experience, that the true Knowledge of pruning of Trees, is the greatest Art requisite to make a compleat Gardiner. I am Master of a small Plantation of Fruit-Trees, situated in a good Soil, exposed to the South, fenced by a Hill and an old Castle, from the North and East; but notwithstanding these Blessings of Nature, I cannot have any Quantity of Fruit, tho' my Trees never want to have a great Quantity of Blossoms. This I impute to my Trees being too luxuriant, and running too much into Wood. I have cut off a great many Branches; I have brought them to fine Heads; I have scarce left any Branches but what grow Horizontally.

But I find by Experience, that my Labour in a great Measure is lost.

I went last Month to see *John Warner's*, of *Rotherith*, little Vineyard, which thou speak'st of in one of thy Books. I find it to be above what thou say'st of it. The Wine for its Flavour and Strength, is to be admired; but his Vines, I must tell thee, are of a different Sort from those thou recommends in thy Book to be planted in *England*, and are managed after another Manner from what is recommended in thy Book, as practised by thy Friend, the ingenious *Thomas Fairchild*, and thy other Friends.

But now to return to the pruning of Trees: I find that *John Warner* has another Way of doing it from what is recommended in thy Books, or practised by any Person else that I could hear of before, and

' ever since never failed of Plenty of Fruit.
 ' His Way of pruning his Trees is so easy,
 ' so ornamental, and so consistent with good,
 ' Sense, according to my mean Capacity, that
 ' I was soon induced to believe what he told
 ' me.

' Thou hast seen his Garden; he has two
 ' long Canals planted on each Side with
 ' Dwarf-Trees; his Soil is very good, his
 ' Trees very luxuriant; he never could bring
 ' them to bear Fruit by the ordinary Way
 ' of pruning; but since he has made use of
 ' this new Method of pruning, he told me,
 ' he never missed of having every Year great
 ' Plenty of Fruit. *John Warner's* Method is
 ' this: He lets 2, 3, or 4 of the straitest and
 ' largest Branches grow up a Yard or two
 ' higher than the Tree; these closely he
 ' prunes all over. I imagine that these May-
 ' pole like Branches (for they resemble May-
 ' poles) carry off the Superabundance
 ' of the Sap, that formerly hindered the
 ' Trees from bearing, which could not be
 ' done by the common Way of pruning:
 ' He tells me, that by this Way he never
 ' fails of having plenty of Fruit; Experi-
 ' ence is the best Master, and cannot be con-
 ' tradicted.

' My Friend, thou art very knowing in the
 ' Secrets of Nature of these Kinds; I should
 ' be glad to have thy Opinion in this Matter,
 ' if thou approv'st of it as beneficial to the
 ' Publick, recommend it to thy Friends; in
 ' that thou wilt oblige very much

Thy unknown Friend,

R. W.

In

P. S. ' In thy Books, thou recommend'st
 ' very much to the Publick, the planting of
 ' Firr-Trees, and hast printed a Letter from
 ' a Friend in *Scotland* on that Subject. But
 ' I wonder very much, that thou hast never
 ' heard of the finest Plantation, for its big-
 ' ness, in the World, near *Hope*, six Miles be-
 ' yond *Gloucester*, in the Road to *Mormouth*:
 ' It was planted by one *Wade* of *Gloucester*,
 ' on a high barren Common, which bears
 ' nothing but Furze and Fern. The Trees
 ' thrive very well; they are planted in a
 ' regular Manner at great Distance; they
 ' make the finest Prospect that ever I
 ' saw in any Place of this Nature, and I am
 ' no Stranger to other Countries. It is so
 ' ornamental, so beautiful, and so commend-
 ' able a Sight, that it cannot be admired too
 ' much. The only Fault to be found in it, is,
 ' that the Trees are planted at too great a
 ' Distance from each other; then instead of
 ' some Thousands that grow there now,
 ' there might be some hundred Thousands.
 ' It is an Observation that Trees will not
 ' thrive upon high cold Hills, except they
 ' are planted close together, and in Quanti-
 ' ties. The large Plantations made by the
 ' Duke of *Beaufort*, on the Hills near *Bad-*
 ' *minton*, has convinced the World of the
 ' Necessity of planting close, and in Quanti-
 ' ties, on such cold Hills. There was a great
 ' deal of Labour and Money lost on those
 ' Plantations. An honest Friend told the
 ' Duke, that he had taken care and provided
 ' well for the Body of his Trees, by making
 ' Walls

‘ Walls about them, but that he had not
 ‘ bestowed upon them Nightcaps to cover
 ‘ them from cold Weather, for want of
 ‘ which they never thrived. It is worth thy
 ‘ while to enquire about this Plantation of
 ‘ Firrs. *Adieu.*

The foregoing Letter contains many Matters of Consequence; which to explain fully, would employ more Paper than I have to spare in this Month's Remarks. I shall therefore, at present, only give some general Hints concerning the Management of such Trees as blossom freely, and bear little Fruit, and defer the entering into Particulars upon this Subject, till the next Month.

In some of my former Papers, I have taken Notice of the *May-pole* Branches here mention'd, under the Title of Wast-pipes to carry off the over-abundant Sap; these I have only observ'd at Messieurs *Warners* at *Rotherhith*, and am persuaded they are of extraordinary Use for bringing a Tree to bear.

2dly, I do not think that leaving only the horizontal Shoots of a Tree, can any way put a stop to the Luxuriance of it; but the bending or laying down of upright Branches horizontally, checks the Sap, by stopping its Course through many of the Vessels, and helps the pithy Parts to digest their Juices, so as to produce Flower Buds; for all Buds of a Tree are either Leaf Buds, or Flower Buds, as the Pith is more watry or undigested, or more dry and tending to decline.

The Pith in one Year's Shoot is abundant and watry.

The

The Pith in a Shoot of two Years is less in Quantity and more dry.

The Pith in three Years Shoot is hardly to be discern'd ; and in older Branches is of no Use, and entirely consumed or rotted.

Now, where this Pith is over charged with Water, we seldom observe any Disposition to flower; or if the Tree do blossom, the Farina which should impregnate those Blossoms, is so unripe, that they very rarely set for Fruit.

3dly, There are some Soils which encourage Trees to shoot large luxuriant Roots, which imbibe so much Water, that the Shoots which answer them in the Head of the Tree, are over-charged with Sap ; and in such Case, either those Roots should be prun'd, or some waste Branches or Pipes should be left growing to discharge those watry Parts, as in Mr. Warner's Trees. But I wish to know what Soil, and how deep, is in the Garden of my Correspondent R. W.

4thly, It may happen, that the Blossoms may be destroy'd by Dale Mists, or Frosts; but to all these Points, I shall speak fully in my next Month's Observations.

REMARKS upon the Weather, and Produce of this Month.

THE Weather of this Month was remarkably warm, so that most of the Gardiners about London employ'd themselves in many Works, which used to be done in February. The Showers which fell now, were rather recreating than cold, as usual ; and the Bright-

Brightness and the Warmth of the Sun, seem'd to be a Month forwarder than its Course would allow. The Rains that fell about the Beginning, were chiefly in the Night, and occasion'd some of the lower Grounds to be overflowed. The Power of the few Frosts which happen'd this Month, did not exceed what I have observ'd in *October*.

We have little now extraordinary in our common Gardens for eating. The common Roots hold yet pretty good, and the Greens for Table use, are chiefly Sprouts of Cabages, Spinage, and young Colewort Plants; forced Asparagus is the best, and as the Month was mild, it was generally more green and better tasted than what we used to have in other Years at this Time.

As a great Curiosity which deserves to be noted in the Way of Gardening; Mr. *Thomas Fowler*, Gardiner to Sir *Nathaniel Gould* of *Stoke-Newington, Middlesex*, presented his Master upon New-years Day, with a Brace of Cucumbers well grown, and had then a fine Prospect of a good Crop of the same Fruit; so that there is reasonable Hopes, that his Example may encourage other Gardeners to give Liberty to their Genius, and not confine themselves too much to old Rules.

The End of the Month of January.

A GENERAL
T R E A T I S E
O F

Husbandry and Gardening,

For the Month of *February.*

C O N T A I N I N G

Such Observations and Experiments as
are New and Useful for the Improve-
ment of Land.

W I T H

An Account of such extraordinary In-
ventions, and natural Productions, as
may help the Ingenious in their Stu-
dies, and promote universal Learning.

*To be continu'd Monthly, with Variety of
curious C U T T S.*

By R. BRADLEY, *Fellow of the
Royal Society.*

L O N D O N :

Printed for J. PEELE, at Locke's Head, in
Pater-Noster-Row.

(Price One Shilling.)

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To the Right Honourable the

Earl of *DARBY*,

T H I S

T R E A T I S E

O F

Husbandry and Gardening,

For the Month of *February*,

Is, with the greatest Respect,

Inscrib'd by

His most Obliged

Humble Servant,

R. Bradley.

To the Hon. House of Commons

Bartholomew

THIS

TESTIS

OF

Bartholomew and Gwendolyn

For the Month of January

At the Court of the Lord High Treasurer

Bartholomew

Bartholomew

Bartholomew

R. Bradley

112

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A GENERAL
TREATISE
OF
Husbandry and Gardening,
For the Month of *February.*

Of VINES, *their Culture and Management, according to the Practice of one of the greatest Virtuoso's in France.*



Shall introduce my Papers for this Month, with some curious Observations concerning the Culture of Vines, as now practised by the most Ingenious in *France*, and put into my Hands by a Person of Honour.

The Vine is raised either by Layers or Cuttings, but the Layer is much the surer
and

and best way. The Layers should be made of Branches or Shoots of two Foot long at least, and be all bury'd in the Earth but two Buds only; but if it was three Foot long, it would be so much the better, and make stronger Shoots. These Layers should be never nearer to one another than a Foot and a half, but the Cuttings should be three or four Foot apart if we plant them for standing. When they are once thus disposed, we must be sure to dress them three times every Year, stirring the Ground gently about them: The first time is early in the Spring, just after the Vines are pruned, which is done with an Hough; the second is also done with an Hough in *June*; and the third in *August*, with the same Instrument. In *France*, the first of these Operations is called *Houer*, the second *Biner*, and the third *Tiercer*; but some Vine-dressers neglect this last work, tho' I think it as necessary as the others, to nourish and enlarge the Fruit, and strengthen the Wood: Some will do this after the Vintage, but it has not then the good Effect we desire; all that can be expected from such late opening the Ground, is the Destruction of Weeds, which perhaps rob the Vines of some Nourishment.

The second Year we prune the Vines, leaving only the strongest Shoot shorten'd to three Buds.

The third Year we must dis-bud our Vines, so as to leave only two strong Shoots, which the following Year must be pruned, *viz.* the lower Shoot, which is next the Earth, must be left with three Buds only, but the uppermost may be pruned to five or six Buds, and then set up the Props or Stakes. The

The dis budding I speak of, I account very necessary, because a Vine is little wounded by it, and the Shoots which come forward are strong and bring good Fruit; but without this Method, our Vines are either too much wounded, or are too full of Wood, to bear or ripen their Fruit well in a Vineyard.

The fourth Year, 'tis necessary to clear the old Wood of its black Strings, or rough loose Bark, and refresh the Earth about the Root in fair Weather if possible, without Frost or Snow or Thaw; and when the Vine is strong, we may leave two Runners, one bearing Branch, and one Layer: In extraordinary cases we may leave two or three of the latter, but this depends upon the Skill of the Vine-dresser; we may leave more or less Wood or Buds, as the Vine is more or less strong.

In a full Vineyard the Layers must be taken up every Year at the pruning Season, when it is also a proper time to lay down others; the Layers made in Winter are apt to shoot into Wood, and those laid down in Spring are more subject to bear, and run less into Wood.

'Tis a Rule in *France* to prune young Vines, that is, during the three first Years, at the New of the Moon; but when they come to bear, they choose the Decrease, in *February* or *March*; and in this last case, 'tis to be observed, that the Top Bud be left at the back of the Slope in the Cut, lest the Vine, which is subject to bleed by such late pruning, should drop so much upon it as to rot the Bud:
And

And likewise great Care should be taken that to Bud be cut or wounded upon the Shoots that are pruned.

To bring Grapes forward, we may plant them against Walls ; but I think 'tis not advisable to plant them among Peaches or other Fruits, but against a Wall by themselves; for their vigorous Shootings are apt to over-grow, and smother the Trees that grow near them.

If we cultivate any of the Muscat-Grapes, we should not use Dung about the Roots; for tho' they will make vigorous Shoots by that Dressing, they will not bear well, and the Grape will ripen late, and have little Taste; but when the Soil is dry and poor, the Fruit is well relished, ripens sooner, and lasts longer.

It is an Observation about *Paris*, that when we plant Vines against Walls, they should be exposed to the *East* Sun rather than to the *West*: I speak this of such Vines as are brought from the warmer Climates and ripen late; for in this Exposition, I find the Fruit is better and ripens earlier than the same Sorts will do against a *South* Wall; for the violent Heat of the *South* Sun and the Wall together, hardens the Skin of the Grape, and tho' it is sooner coloured, yet are its Juices less mature or agreeable.

N. B. *An Instance of this kind I observ'd at Cambden-House, two or three Years successively.*

In the pruning of late bearing Vines, we should observe that we do that Work as soon as the Fruit is gathered; which occasions the Sap to move early in the Spring, and
bring

brings the Vine to blossom earlier than ordinary, which consequently disposes the Fruit to ripen soon; but if we prune these late Grapes in the Spring, the Fruit will come late, and be good for nothing.

To gain time in bringing forward any curious sort of Grape, we may graff a Vine in the Cleft; and for this purpose we must choose our Stock at the Root of some strong Vine, and cut it into the Ground three or four Inches, and therein fix our Cion which will presently strike: I account the best Stocks for this use are the Muscat Grapes, whose Juice is sweet and high flavour'd, and the proper Season for the Work, is about the beginning of *April*.

When the Foot of the Vine is large, we may put in two Cions side by side, but when 'tis young and pithy, we must place our Graff in the Stock as we graff a Jessamine: Such Graffs will come to bearing the second Year.

To raise Vines from Cuttings, I have saved a great deal of time, by setting the Cuttings in Baskets of proper Mold, and putting them in Hot-beds, always observing to prune the Bottom of the Cuttings just below a Bud; by this means I have had very large Vines in one Summer, and about Autumn have planted them with their Baskets in the Places where I designed them to remain: If they were late sorts, I pruned them be-times, which occasioned the Fruit to ripen before the Autumn Fogs could injure it.

The Grapes which are most esteem'd in *France* are,

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First,

First, The *Precox*, or *Morillon hativeau*, *i. e.* the early *Morillon*, or by some call'd *Vigne de la Magdelaine*, *i. e.* the *Magdalen Grape*, it is the earliest ripe, but is not so good as it is rare: The Skin is thick, and is subject to be devour'd by the Flies: However we must not be without some Vines of it, as it makes a Dish at the Table before other Grapes are fit for eating.

2. *Morillon taconné*, or *Munier*, *i. e.* the *Millers Grape*, so call'd, because of its white powder'd Leaves: This Sort is the second ripe, and much better than the First; it makes excellent Wine and bears well.

3. *Morillon noire Ordinaire*, *i. e.* the common black *Morillon*, is a very sweet Grape, fit for the Table, and makes good Wine. In *Burgundy* 'tis call'd *Pineau*, and at *Orleans*, *Auverna*.

4. *Morillon blanc*, *i. e.* the white *Morillon* is also a very good Grape; but its Skin is harder than the former.

5. *Raisin de Mantoue*, *i. e.* the *Mantua Grape*, is ripe about the beginning of *August*; its Fruit pretty large as well as its Kernel; its Shape is rather long than round, and its Colour like yellow Amber, its Juice is very rich.

6. *Raisin d'Autriche a feule de Persil*, *i. e.* the *Austrian Grape*, or Parsly leav'd Grape, is also call'd *Ciouta*, is a white sweet Grape, which bears pretty well: The Fruit is somewhat like the *Chasselas*, but its Juice is not very vinous.

7. The *Chasselas*, or *Muscadet*, is an excellent large Grape, either for eating raw or drying

drying, or making Wine: Its Fruit is not too full of Seeds.

8. *Chasselas Noir*, i. e. the black *Chasselas*, has most of the Qualities of the former, but is not so common. There is also a red Sort of *Chasselas*, whose Fruit is larger than the others; but neither of these are strongly colour'd.

9. *Muscat blanc de Frontignan*, i. e. the *Frontignean* white *Muscat* Grape, is a large long Grape, full of Seeds; 'tis excellent for eating raw, or in Sweetmeats; it makes good Wine, and dries well, either in the Oven or in the Sun.

10. There is a kind of Grape call'd *Muscat blanc de Piedmont*, i. e. the white *Piedmont Muscat* Grape; its Fruit is long, and has smaller Seeds than the former, and its Pulp more unctuous.

11. *Muscat de Ribexalte*, is richly musked, its Seeds small, and its Juice sweet and so agreeable, that it would be one of our first Grapes, if it was not apt to run; frequently degenerating to the *Curran* Grape, and sometimes has no Seeds.

12. *Muscat rouge*, i. e. red *Muscat* or *Muscadine*, by some call'd *Muscat de Corail*, i. e. *Coral Muscadine* from its lovely Colour; has the same Qualities of the former, but its Seeds are firmer. It requires a good deal of Sun to bring it to Perfection; but 'tis then one of the best Grapes.

13. *Muscat Noir*, i. e. the black *Muscadine* is larger than the former, very full of Seeds, but is not so high tasted, but its Juice very sweet; it bears well, and ripens its Fruit pretty forward.

14. *Muscat Violet*, i. e. the Violet Muscadine, is of a clearer Black, tending to a violet Colour; its Fruit is very long, and its Seeds large; it is richly musked, and one of the best.

15. *Malvoisie Musquée*, i. e. the Malmsey Muscadine, is one of the richest musked Grapes, surpassing every other Kind in high Perfume. It comes from *Montferrat* and grows plentifully about *Turin*.

16. *Muscat long*, i. e. the long Muscadine, or *Passe-musquée d'Italie*, i. e. the late Italian Muscadine, makes excellent Sweetmeats, or may be eaten raw: Its Grapes are very large and long, but it must be warmly exposed to ripen its Fruit; but even tho' the Season should not suffer it to be half ripe. It is much higher perfumed in Sweetmeats than any other Grape; the fire supplying that musked Flavour, which it was denied by the Sun.

17. There is likewise a Grape call'd *Muscat long Violet*, i. e. the blue long Muscadine, or in some Places call'd the *Madera Muscadine*, 'tis a beautiful and excellent Grape.

18. *Rasin de Corinthe*, i. e. the Curran Grape, or *Corinthean Grape*, has a sweet Juice; the Fruit is narrow, and closely pressed together, it has seldom any Seeds no more than the red Curran Grape.

19. *Le Corinthe Violet*, i. e. the blue Curran Grape, is a little larger than the former; is very good, and without Seeds; it is very apt to run, and for that Reason should be pruned longer than other Vines.

20. *Raisin sans Pepin*, i. e. the Grape without Kernels, is a Kind of *Chasselas*, but the Fruit is not so large, and a little Sharp; however it is extreamly good prepared in an Oven, as it has no Kernels; for which Reason, some call it the great Curran Grape.

21. *Vigni Greque*, i. e. the Greek Grape, by some call'd *St. Jaques*, i. e. *St. James's Grape*, or *Raisin Marveilleux*, i. e. the Miraculous Grape, is a Sort of red *Burdalais*, whose Grape is large and round, comes early; has a pleasant sweet Juice, and makes very good Wine; its Fruit has a very good Appearance; and its Leaves, when the Fruit is ripe, are finely mark'd with red, which is pretty frequent to black, blue, or red Grapes.

22. *Le Fenetin*, or *Jeneting Grape*, is white, by some call'd *Muscat d'Orleans*, i. e. *Orleans Muscadine*, or *Raisin de St. Menuis*, is very sweet and not unlike the *Melié*, but rather like the *Malmsey Grape*; 'tis apt to degenerate.

23. *La Baunie*, i. e. the *Beaune Grape*, is of a whitish Colour, pretty good, bears well, and is so call'd, because it is very frequent and much admired about *Beaune*.

24. *Le Bourguignon*, is a black Grape, pretty large; is better for making Wine than for eating: it is an extraordinary Bearer.

25. *Le Damas*, i. e. the *Damask Grape*, is an extraordinary Fruit; the Bunches are very long and large, and the Grapes bigger than ordinary: They are of an Amber Colour, and have but one Kernel in each; they are apt to run, and therefore should be pruned

ed long; there is the white and the red of this Sort.

26. *Raisin d'Abricot*, i. e. the Abricot Grape, is so call'd, because its Fruit is yellow, and gilded like an Abricot; 'tis of that Tribe which is distinguish'd by the Title of *Bourdelsais*.

27. *Melié blanc*, i. e. the white Melie Grape, is a good Grape for eating, and one of the best for the Vintage; its Juice is sweet, bears well, and will keep. This is one of the best for drying in the Oven.

28. *Melié noir*, i. e. the black Melie Grape, is not so good as the former for eating, nor makes so strong Wine.

29. *Melié vert*, i. e. the green Melie, is very rare, and bears well, and is not apt to run. The Wine made of this Grape never changes yellow.

30. *Le Sauvignon*, is a black Grape, large and long; 'tis early ripe, and is one of the best Grapes

31. *Le Sauvignon blanc*, the white Sort has the same Qualities with the former; each of them are little known.

32. *Le Gamet*, is of two Sorts, the black and the white; 'tis an extraordinary Bearer, and one may say the very best; but the Wine made of it is small, and its Plants last but few Years.

33. *Bec-d'Oiseau*, i. e. the Birds-bill Grape, or *Piquant-Paul*, is call'd in *Italy*, *Pizutelli*, that is to say pointed; the Grape is large, very long, and pointed at both Ends.

34. The blue *Pizutelli*, is call'd in *France* *Deut de Loup*, i. e. *Woolfs-tooth*; its Grape

is long but less pointed than the former; it keeps well, and is a good tasted Fruit, and very handsome to the Eye.

35. *Le Glan*, i. e. the Acorn Grape, so call'd, because the Fruit is shaped like an Acorn; it is very sweet, keeps well, and is of a yellow Colour.

36. *Raisin Suisse*, i. e. the Switzerland Grape, is rather rare than good. The Clusters are large and long, and its Fruit striped with black and white, and sometimes half one and half the other.

37. *Gros Noir d'Espagne*, i. e. the great black Spanish Grape, or by some call'd *Vigne d'Alicant*, i. e. the Alicant Grape, brings large Clusters, well furnish'd with large Grapes fit for the Table; from this Grape is made the most excellent Spanish Wine.

38. *Le Sanmoireau*, is a black Grape, excellent for eating and making of Wine. The Grape is longish, firm, and grows free upon the Bunches.

39. The *Frementeau* Grape, is of a reddish grey Colour; its Bunches pretty large, and its Grapes or Berries closely set together. The Skin of this Fruit is a little hard, but its Juice excellent; 'tis of this Grape is made that excellent Wine call'd Sillery Wine, or *Vin de Sillery*.

40. *Blanquet de Lemois*, is a white transparent Grape, as clear as a Glass; the Berry is long and pretty large; it bears well, and has an excellent rich Juice.

41. *La Malvoisie*, i. e. the Malmsey Grape, is of a grey Colour, bears well; its Berry small, but extremely rich and high flavour'd:

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It ripens early, and is so full of Juice, that I esteem it the most melting of all Grapes.

42. *Malvoisie rouge*, i. e. the red Malmsey Grape, is of a flame Colour, and has the same Qualities with the former.

43. *Malvoisie blanche*, i. e. the white Malmsey Grape, is a more rare, but a later Grape than the other two. I esteem the grey Sort to be the best.

44. *Le Maroquin*, is a large blew Grape, which brings Bunches of an extraordinary Size, and its Berries very large, round and hard; the Wood is redish and the Leaves vein'd with red. One Sort of it bears in an extraordinary Manner, and blossoms three times in a Summer. The *Midsummer* Fruit sometime comes to Perfection about *Paris*, but the third Blossom comes to nothing: However in the South Parts of *Italy*, all the three Crops ripen, for which Reason 'tis call'd there *Uva de tre Volti*.

45. *Raisin d'Italie*, i. e. the *Italian* Grape, named by the *Italians* *Pergoliese*, is of two Kinds, viz. the white and the blew. The Bunches are large and long, and the Berry longish and freely disposed upon the Bunches. It does not ripen kindly about *Paris*.

46. *Raisin d'Afrique*, i. e. the *African* Grape, is very large, its Berries like Plums; there is the red and the white; its Bunches are of an extraordinary Size; the Figure of its Grape rather long than round; a little flat towards the Point; its Wood and Leaf are remarkably big, and it requires a great deal of Sun.

47. *Le Surin*, is a Vine highly esteem'd in *Auvergne*; 'tis one of the *Melie* Tribe, well tasted, and its Fruit a little pointed.

48. The *Bourdela*s, is of three Kinds, the white, the red, and the black, the Bunches of Fruit are very large, rather fit to make Verjuice or Sweetmeats than for eating. This Vine is the best we can Use for grafting many Kinds of Grapes upon; chiefly such as are apt to degenerate, as the Damask Grape, and the Curran Grape, but it is better to graff the Muscat Grapes upon Plants of their own Tribe.

49. *Le Teinturier*, i. e. the Dyers Grape, call'd also *Noirault*, and *Plant d'Espagne*, has its Fruit very much pressed together upon the Bunches, and is of a very black Dye; its chief Use is to heighten and colour the Wine, and is of great Use in the Cure of Wounds.

Thus far my Friends Papers reach concerning the Vines chiefly admired in *France*. It would be well if we could reconcile our *English* Catalogues to those of *France*, that we might not send to that Country in Expectation of Novelties, which may prove to be no more than what we have here already under other Names; and if we do not find in our Collection, Grapes answering to the Descriptions of every Sort in the above List, we may know where and how to find them again. I recommend the Care of our Catalogue of Fruits, for our Success in pruning and dressing of Vines depends upon it; for all Sorts of Grapes are not to be prun'd alike,

nor at the same Season ; and therefore without an exact Knowledge of the Sorts we shall run into Confusion.

When I was in *France* about three Years ago, I was curious to observe their Fruits, and especially their Grapes, which were the earliest ripe, and which ripen'd their Fruit best in the Vine-yards, in the North Parts of *France* ; that if possible, some of the South Parts of *England* might be successful in Vine-yards ; tho' I confess, as far as my Judgment can determine, the Gentlemen of the West may be said to want no foreign Liquors so long as they enjoy the Nectar of their Orchards ; but then when we consider that it is not every where that Apples will prosper, and that in some Parts of the West, there are Tracts of Land which are not yet cultivated, by Reason of the many Rocks and Quarries ; I say such Land will be greatly improved by planting of Vines, which will thrive there rather than in what we call rich Land, and give Wine where Cider may be wanting.

The Sorts of Grapes which I chose for this End, were three Kinds of *Melie* Grapes, some Kinds call'd *Morignon*, and some of the *Muniers* ; I bought several Hundred of these to be transported to *England*, with a Design, at once, to plant two or three Vineyards in divers Soils ; but first the Carriage of them from *Paris* to *Roan* was tedious, and from *Roan* to *England*, near two Months elapsed before a Ship could be found to bring them to *London* ; and then, which was worse, the Difficulties they met at the Custom-house, detain'd

detain'd them so long, that hardly one in Fourſcore had any living Juices left in 'em, as I found to my Sorrow after they had been planted a Year: However there are ſome yet alive and prosperous; but 'tis from thence alone we muſt expect Increate; for 'tis not worth our while to be at the Expence and Trouble I have been at in bringing over ſuch Things, without they could be readily brought on Shore. The ſame Year, I had likewiſe, with a great deal of Trouble, collected ſeveral new Plants from the King's Gardens at *Paris*, and ſome other Places, which in my Judgment, would have been in a few Years as ſerviceable to *England*, as any Thing has appear'd in the Way of Gardening and Huſbandry; but they were detain'd ſo long at *Dover* by the Custom-houſe Officers, that when they came to *London* they were all deſtroy'd, and my Time and Expence loſt. Now, unleſs there can be ſome Way found out, which may allow free Paſſage for Things of this Nature, which cannot bear Delays, I fear we ſhall make few Additions to our Plants in *England*, whether uſeful or curious.

Nor was this the only time I have ſuffer'd at this rate, for ſome time before, the States of *Amſterdam* preſented me with above an hundred and fifty different ſorts of curious and valuable Plants, which were ſtrangers then in *England*; i. e. I had not ſeen them in any of our *Engliſh* Gardens of Note. Mr. *Fairchild* of *Hoxton* was my Correſpondent, but there was ſo much difficulty to get them landed, that above two thirds of them were deſtroy'd: Now I ſay, could there be a free

Liberty granted for bringing into a Nation such things as Plants which are perishable if they are kept long on Ship-board, it might not redound a little to its Advantage.



A Treatise of several Fruits which may be cultivated in and about Gardens, with some new Observations relating to their Culture.

Of the Hazle and its kinds.

I Have observ'd five kinds of Hazles, which may properly enough be cultivated about a Country-House; and 'tis as likely there may be as many more that may slip my Observation: However, if any one knows rightly how to manage these, he needs no Instructions for the Education of the rest; for they are all so nearly ally'd, that their Management is the same, unless in this particular, that the *Spanish* and *English* Hazles will bear well in a close Coppice, and the Philberts and Cob-nut must have Air to bring a tolerable Crop; the Sorts are these.

Red Philbert, best.—White Philbert, good.—*Spanish* Hazle, good.—Cob-nut, very large.—Common Hazle.

As all these are Hasels or Hazles, I shall give only the general Names which they are called by in the several Countries in and near *Europe*, without entring upon the several Botanical Distinctions; nor should I go so far as this, but for the sake of the Gardiners, who if they have to do with Foreigners, may know what Tribe of Plants is meant if the Question should be ask'd in any Language, and I leave the Gardiners then to produce Varieties.

In *Greek* it is called *καρύων ποντική*, i. e. *Nux Pontica*, or *Corylus*, and *Nux Abellina* or *Avel-lana*; the *Arabians* name the Hazle, *Agileux*, and *Bunduch* or *Banduch*; In *Italy* it is called *Nocivole*, *Nocelle* and *Avellana*, and in *Spain* *Avellane*; the *French* call the Tree *Coudrier*, and those which we call Philberts in *England*, they call *Avelines*; in *Germany* these Nuts are called *Haselnutz*, and the *Hollanders* name them *Haselnoet*.

The red Philbert is esteem'd more than the others; its Kernel is tender, and the Shell very thin: This and the white Philbert, both bring their Nuts in Clusters, even sometimes to the number of twelve in a Bunch.

The Cob-nut brings the largest Nuts of any of the Hazles, but its Shell is very hard as well as its Kernel, and is chiefly esteem'd for its extraordinary Size; however, some delight to propagate it, which with Seven Years Patience may be brought to bear from a Nut set in the Ground, as well as the *Spanish* Nut which comes as well with us as the Philbert; but which kind soever we like best, may with very little trouble be encreased by grafting

grafting upon the common Hazles, upon which it takes freely, so that in Hedg-rows, and other open places, where we have common Hazle, we may presently make an Amendment. It would be well to try some in Coppisses.

Observations concerning the Mulberry.

THE Mulberry-tree is called by the Greeks, *μωρεα*, i. e. *Morea*, and by the Latin *Morus*, the Arabs call it *Tut* and *Thut*, in Italy 'tis *Moro*, and in Spain *Moras*; the French give it the name of *Meurier*, and the Germans *Maubler-baum*; and in Holland *Morer-bescemboom*.

The black Mulberry should be planted in the Shade, to prevent its Fruit from falling; which it is very apt to do if it be full exposed to the Sun: It has been observed in some places, that this Fruit comes extraordinary large, if it be planted and treated in Espalier against a Wall situate to the North.

The white Mulberry brings a small Fruit not worth our care, but the use of its Leaves for Silk-worms is very advantageous; a Friend of mine tells me, that they may both be inoculated upon the *Elm* with good success; 'tis worth our Tryal, considering the slow growth of the black sort; nay, he says the Buds will take upon the *Lime* or *Linden*-tree, and bear better than upon the *Elm*; he advises the Experiment to be made, and the Expence cannot be very great.

Concerning

Concerning Graffing of Walnuts.

I Have often been of opinion that a Walnut might be grafted as well as another Fruit-tree, and often wondred that no body has yet made the Attempt, especially when so many have complained that the Walnuts about their Grounds were not good, and that their Neighbours had better than themselves; the large *French* Walnut is to me the best, not only for its tender Shell, but its sweet Taste, and extraordinary Bigness; but then indeed it will not keep so well as the smaller sort, neither is it so great a Bearer, but I conceive by grafting it, it may be sooner brought to bearing, and in more quantity than when it grows wild, as we find in many other Fruits.

Some Remarks concerning the Pomgranade, and Cornelian Cherry.

THis Tree loves to Shoot very long before it will hold its Blossoms for Fruit, and these come always at the end of the Branches, which I think proper to mention, because our Gardiners commonly Top the Branches, and so both destroy the Blossom and the Fruit, both of which have their excellencies, the Flower for its beautiful Colour, and the Fruit for its pleasant Sharpness.

The Cornelian Cherry is of two sorts, the red and the white, but the latter is not very common;

common; the Fruit has an agreeable Tartness when it is ripe, but is often gathered green, and put in Salt and Water, to imitate pickled Olives.

Observations concerning the Fruit called l'Azeroli.

THis is a kind of Thorn, often called the *Spanish Thorn*; its Leaf is much larger than the common white Thorn, but of the same Figure, the Fruit is red and as large as a Cherry, but has a dry Pulp and is agreeable enough when it is full ripe: Its Flower is apt to drop, to prevent which, we plant it in Espalier, against a Wall exposed to the *South*; the Graffs will take as well upon Pear-stocks as upon the white Thorn; or wanting these, they will do well upon the Medlar or Quince-stock, the last of which, brings it to bear Fruit very plentifully in a short time: This Fruit makes an excellent Sweetmeat much used in *France* and *Italy*.

There is another sort of *Azeroli*, whose Fruit is half as big again as the former, the Leaf likewise is much larger, and of a grey Colour.

The third sort comes from *Canada*, and is more considerable than the others; the Leaf is very large, somewhat resembling that of the Thorn, but less cut or notched on the Edges: These two last sorts were brought from *France* about thirty Years ago.

The

The fourth sort is the white *Azeroli*, which is pretty common in *Italy*, its Fruit has the same agreeable Sharpness as the former. This Plant is known all over *Europe* by the name *Azeroli*.



Curious and useful Observations relating to Peaches, the Names, Qualities and Culture, collected by a Gentleman of forty Years Experience in Gardening; with some Remarks.

AS the Peach is one of the most delicious Fruits of the Garden, if it be well known, and managed with Discretion, it is worth our while to enquire into the several Varieties of it, and then examine into their several Ways of Management. The List of the several sorts here mentioned, will be those which are accounted the best in *France*, which amount to a good Number: However, a large Garden should not be without them all, forasmuch as they ripen at several Seasons, beginning about the middle of *June*, and affording Fruit till *November*. But where a Garden is small, the Owner may choose his Fruit out of the following List, and please his Taste by examining the Descriptions of every sort.

The earliest sort is in *French* called *l'Avant*,
Pesche musquée, i. e. the Early or Avant
 II. M m Musked

Musked Peach; the Fruit is small and white, but its Water or Juice very sweet; 'tis a great Bearer, and is very subject to be invaded by Pismires.

The 2d is call'd *la Pesche de Troye*, i. e. the Troy Peach, which ripens at the same time with the former; it is call'd in some places *Avant Pesche Musquée rouge*, or the early red musk'd Peach; 'tis larger and higher flavour'd than the white sort:

3. *La double de Troye*, i. e. The double Troy Peach, is larger and rounder than the former, and as well tasted; 'tis a great Bearer, and holds some time good upon the Tree; there are two kinds of this Peach, the one red, the other of a brownish Purple.

4. *La Pesche Capucine*, i. e. The Capucine Peach is early, and is also to be esteem'd for being pretty large and very well tasted; 'tis a little longish in its Make, it was rais'd from the Stone of an early Peach, and is so changed in its Fruit, that it exceeds them all; a Change of this kind I find common to Peaches rais'd from the Stone; the Stone of a Peach sometimes bringing a Pavy, and the Stone of a Pavy producing a Plant which brings a Peach: Note, the Pavies are hard flesh'd, and the Peaches are melting.

5. *L'Alberge*, i. e. in the *English* Catalogue the Alberge Peach, which is yellow within and without, of a middle Size, excellent rich Flavour, a little flat, its Stone small, and cover'd with a redish Purple.

6. *L'Alberge rouge*, i. e. the red *Alberge*, has a white Flesh, is flatter than the former, and not so well tasted.

7. *L'Alberge Violette*, i. e. the Purple *Alberge* Peach, is rarer than the two preceeding ; its Colour is a brownish Purple ; the Fruit is somewhat small, and is not so good as the yellow, which is an excellent Peach.

8. *La Pesche Magdalaine*, i. e. the white Magdalain Peach, brings a very large Fruit in good Ground, but is seldom mark'd with red ; 'tis one of the best Peaches we have in the Garden, being full of an high flavour'd Juice, which melts freely in the Mouth. 'Tis subject to drop its Fruit, and often invaded with the *Pismire*, as most of the high tasted Fruits are. There is one of this Sort which is call'd the musked *Magdalain*, which has a richer Flavour than the rest. It is good to observe, that these Trees blossom early, and should be shelter'd from the Rudeness of the Weather while they are in Flowers, if we expect a good Crop.

9. *La Magdalaine rouge*, i. e. the red Magdalain Peach, is not so large as the former ; but the Flesh or Pulp is rather more delicious. It is a better Bearer than the other Magdalain Peaches.

Memorandum, There is not one of these Peaches which would not ripen without a Wall, and might be brought to bear upon Standards, tho' the shaking of the Winds would be apt to make them drop their Fruit ; but if they were to be train'd in the Manner Mr. *Herron* has mention'd about Pears, in his Letter to me inserted in my Papers for December 1721, that is, in placing Arbour Poles in such a Manner as to form the Shape of a Bell the wrong side uppermost, and the

M m 2

young

young Shoots of the Tree twisted about such a Frame like a Screw, I am apt to think we might keep our Peach-Tree full of Wood every where ; and there would be no Necessity of Pruning, which is too apt to bring Gum, and to canker the Trees to their Destruction in Stone Fruits. If Reason can guide us, this Contrivance must be good ; for all Stone Fruit is apt to gum, by pruning and wounding of them ; and the more a Tree gums, the sooner it decays : But in this Screw, like winding of Trees, there need be no pruning, and consequently those which bring Stone Fruit may be of long last. I have seen a Standard Peach-Tree that has not been pruned, as large as a good Orchard Apple-Tree, and has brought good Fruit ; and at *Istleworth* at *Middlesex*, I have seen an Apricock-Tree as large : But when they are against Walls, they are so often cut, that they seldom fill the Wall : However, in the Way I mention, the Peach is safe from the Knife and Gum ; its Blossoms may be easily defended from the Frost and it will not be attack'd with Vermine, such as the *Pismire* and the *Fly*, because its greater Freedom preserves it from Wounds and Gum. But to proceed.

The 10th Peach is call'd in *French*, *la Pesche mignonne*, i. e. the Minion Peach, or by some *de France la Veloutee*, i. e. the Velvet Peach, is of the Magdalain kind, 'tis rather flat than round, is pretty large and well-colour'd within and without, 'tis very juicy and well-tasted, and is esteem'd as one of the best Peaches.

11. *Is le Pavy blanc, i. e.* The white Pavy, is said to be the Male of the Magdalain Race; it is high flavour'd and musk'd, and as it comes among the first Peaches, it ripens easily: We have likewise the red and yellow *Pavies*, which are in eating at the same time, and it is the Opinion of curious Men, that every Peach has its *Pavy*, which is supposed the Male Peach.

12. *La Pesche Cerise, i. e.* The Cherry Peach, is red, the Flesh a little dry and hard, 'tis not one of the best.

13. *La Pesche Royale, i. e.* The Royal Peach, brings a fair Fruit, of a fine red Colour; 'tis rather long than round, but has little Juice.

14. *La Belle Chevreuse* is of a bright red Colour, and has a delicate sweet Juice, the Fruit is longish and pretty large; it bears very well and has several Varieties in its Tribe.

15. *La Pesche d'Italie, i. e.* The Italian Peach, is a sort of *Chevreuse*, a little larger than the former. It has some Qualities of the Peach, which the French call *la Pesche de Pau*, but is a little more pointed, and is an excellent Fruit.

16. *La Pesche Chanceliere, i. e.* the Chancellor Peach, is of the *Chevreuse* Family, but is the largest and best of them all; and has been brought to bear and ripen Fruit very well upon Standards in the Chancellor Seguier's Gardens in France, from whence it took its Birth from a Stone of the common *Chevreuse* Peach.

17. *La Pesche Dreusel*, is rather long than round; its Skin is velveted and well colour'd, is dry, but very agreeable; its Flesh or Pulp

is almost red, from whence it is call'd in *France*, *Sanguinole*, i. e. the Bloody Peach.

18. *Pesche Bourdin*, is a round fleshy Fruit, pretty red, and of a middle Size; it has a very rich Flavour, much like that of the *Persian* Peach: 'Tis well esteem'd, and is a great Bearer, and brings better Fruit in Standards or Dwarfs, than against a Wall.

19. *Pesche Violette*, i. e. the Violet Peach, is rather long than round, very melting, and its Juice of a vinous Flavour; it bears well either against a Wall or in a Dwarf, and is esteem'd one of the best. There is a large and a small Sort.

20. *La Pesche blanche*, i. e. the white Peach, is a good Fruit, but not so well flavour'd as the Violet Peach; its Tree is very tender, and should be carefully look'd after. This Peach has its Pavy, which is a

21. White *Brugnon*, finely spotted with red; this Sort is much improved by lying by some Time before it is eaten; its Flesh then becomes tender and melting; it comes late, but is very good.

22. *La Pesche licée jaune*, i. e. the yellow rough coated Peach, is pretty large and flat; and tho' it comes late, its Flesh is good and juicy enough.

23. *Pesche Violette tardive*. i. e. the late Violet Peach, is large and fair, and is well tasted when the Autumn is dry. It ripens so late in *October*, that when the Season is wet, it is worth little. It should always be planted against a South Wall.

All the rough coated Peaches have their Males, which are call'd by the *French* *Brug-*

nons or *Brunions*, which are rounder, larger, and have their Juice more musked or per-fum'd. Their Flesh is firm and a little hard, and therefore they require a great deal of Sun; but none of the *Brunions* are so much esteem'd as their Peaches, because they do not quit the Stone.

24. *Le Teton de Venus, i. e. Venus's Breast*, is not unlike the Admirable. It has some Resemblance of a Woman's Breast, pointed on the Top like a Nipple; its Flesh is white, and without side 'tis a little touch'd with red; 'tis melting and high flavour'd, and is one of the best late Peaches.

25. *Pesche Commune, i. e. the Common Peach*, is by some *French* Gardiners call'd *Pesche de Corbeil, i. e. the Basket Peach*; it is round, very white, and velvety. 'Tis a Bastard Magdalain, raised from a Stone. It is very well tasted in light Ground; but in the strong Lands, its Flesh is green and bitter. It is a great Bearer, and will come to Perfection without the Help of a Wall.

26. *Pesche a fleur double, i. e. The double Blossom Peach*, is rather a Curiosity than a good Peach, and more coveted for the sake of its Flower than for its Fruit; the Fruit indeed is large and fair, but it seldom bears.

27. *Pesche Admirable* is what we call in *England*, the *Admirable*; it has that Name, as well for its Beauty and Goodness, as for its large Fruit; 'tis almost round and very red, and its Flesh very melting and well-tasted; it is very much esteem'd, and one can hardly have too many Trees of them.

28. *Pesche Pourprée, i. e.* The Purple Peach, or by some call'd *Nivette*, is large and almost round, of a brownish red and velveted, very fleshy and well-tasted ; 'tis one of the best Bearers and best Peaches.

Pesche d'Andilly, i. e. The Andilly Peach, is very large, round and fleshy, 'tis white within, and without somewhat like the *Persian Peach*

30. *La Persique, i. e.* The *Persian Peach*, is very large, less long, but rounder than that which is call'd *Pesche de Pau, i. e.* the Skin Peach ; it is red and pointed, and its Fruit is commonly blister'd or knotted on the Outside, its Flesh is delicate and full of Juice, very red towards the Stone, which is flat, and sharp-pointed ; it bears well either in Standard, or against a Wall, and well deserves a Place among our best Peaches.

31. *Pesche d'Abricot, i. e.* The Abricot Peach, is by some call'd the *Scandalian Peach*, is of two sorts, both round, one smooth and velveted, and of a redish Colour ; the other rougher coated and yellow ; they bear and ripen well either in Dwarfs or Standards, and may be raised from the Stone.

32. *Pesche Bellegarde, i. e.* The Bellegard Peach of the *English Catalogues*, is a fair, large and round Fruit, and has very little red within or without ; 'tis a good Peach and comes a little late.

33. *Pesche Narbonne, i. e.* the *Narbonne Peach*, is very large and greenish, its Flesh is a little dry and cotony, rather to be esteem'd for coming late, than for its Goodness.

34. *Pesche*

34. *Pesche Rossane*, i. e. the *Rossane* Peach, is esteem'd in *Languedoc*, it is yellow within and without, the Flesh is a little dry, and not very high flavour'd about *Paris*; the Fruit is long, large, and comes late.

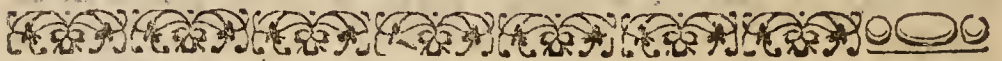
All the Peaches which are yellow within and without are less esteem'd than the others, having a drier Flesh, and a less perfum'd Juice.

35. *Belle de Vitry* is a very large Peach, flat, fleshy, and full of Knobs, 'tis a very good late Peach; 'tis juicy, rich, and very red towards the Stone, which is very small; it is so like the *Nivette* Peach, that some Gardeners would have it the same; but I am of Opinion it is the Female of the *great white monstrous Pavy*, which is not unlike it, and comes at the same time; 'tis almost round like the *Admirable*, which is white within and without, but the *Belle de Vitry* is of a brownish red and velvety.

36. *Pesche de Pau*, i. e. the *Skin* Peach, is of two sorts, viz. the round kind, which is a good Peach, and the best of the two; and the long sort, which is flat, and subject to decay in the middle, its Stone splitting for the most part; it requires a warm Exposure, otherwise its Fruit is green and tasteless; the Male of this sort is very large, and is call'd the *Monstrous Pavy*, which brings a fine red Fruit, full of Flesh, and requires the warmest Exposure to bring its Fruit to perfection.

There are still many other Tribes of Peaches, as those that bear the Title of *Presse*, of which there are white, red and yellow: The *Mericotones* or *Malacotones*, &c. which

I shall not particularly take Notice of, no more than of some Pavies, which will not ripen in the colder Climates, *i. e.* where the Sun is not very hot in *October*, which is very necessary to soften the Flesh of the *Pavies*, which are too apt to be hard.



Experiments relating to the Culture of Peaches.

ALL Peaches raised from the Stone are so generous to the Climate where they are raised, that their Fruit ripens well, while they are cultivated in that Climate. Some indeed may be worse in Nature than others, but every one may preserve the good, and sling away the rest; for Seedling Plants are apt to vary in the Goodness of the Fruit; and I think, it would be of great use to our Gardens to sling out all the indifferent Kinds of Fruit, that they might not have possession of those Places where the best might flourish. I would have our Catalogues abridg'd, for like great Societies, there are ten bad for one which brings good Fruit.

The Peaches thus raised from Stones, hate a Knife, and 'tis no matter how little any Peach is pruned; the Standards bring more pleasant Fruit than Peaches against Walls, because, as I suppose, the Sun takes them on all Sides; and then the Standards are not so much under the Discipline of the Knife as the Wall-Trees, and therefore are free from Insects, curled

curled Leaves, weak Shoots, Blights, (tho' more exposed to the Winds) or to loose Branches, as the prun'd do every Year. The free growing Trees are always healthful, but those that undergo the Severity of pruning, either languish, or shoot to no purpose. The Standards also bring their Fruit later than the Wall-Trees, and furnish us with Benefits when our Walls are vacant; but if there is any occasion of pruning the Standard Stone Fruit-Trees, 'tis only in case they rise too high, and then they should be lop'd as we do Willows, and they will then send out large Wood, which will soon bring good Fruit, even the second Year. *N. B.* Upon the lopping such Trees, the Wounds should be immediately plaister'd with some Preparation of Wax, Tallow, &c. to prevent the Gum; but the cutting of the great Wood does not encline the Tree so much to Gum as wounding the little Wood.

As the Peach is one of the most delicate Trees of our Garden, it must be diligently cultivated, and we must consult its Soil, which for the good of the Fruit should rather be light than strong, and more dry than wet; the wet strong Soil will indeed give large Fruit, but then it is watry and insipid; and the light dry Soil, tho' the Fruit is not so large, yet is it better colour'd and well flavour'd.

The Peach chiefly covets the Morning or the Noon Sun, as the Fruit is disposed to ripen more early or late, and those which will bear in Standard or Dwarfs should not be too rudely exposed, but have some Shel-

ter, otherwise our Expectations will be baulk'd, for the Tree is very subject to suffer by the Wind.

A Peach may either be grafted upon the Almond or the Plumb; and it would be well to consider the Nature of our Soil before we chuse which Stock to graft on; for the Almond loves a strong Land a little wet, and the Plumb chuses a drier and higher Soil.

We should set the sweet Almond to raise Stock from, laying the Almond about *Christmas* in dry Sand to sprout; and the *March* following, or in *April*, according to the Softness of the Season, we may plant them at a Foot Distance in the open Ground; and if the Sprout or Radicle be then too long, it may be pinched short, as our Judgment shall direct; and about *September* in the same Year, they may be inoculated in a dry time, observing that the bud be taken from a strong Shoot of a Peach, and has three Leaves growing at it.

All Buds will take better the first Year upon the Almond than the second or third Year, because the Stocks of the first Year are not so subject to Gum, as those that are older.

If the Almond Stocks are large that one would graft or inoculate upon, we should do it at the time of the second Shoot or Midsummer Shoot, that the Bud may sprout immediately, and not be suffocated by the Gum, which too often attends a Wound made when the Tree is in its full Sap.

There is a sort of tender Almond which comes from *Genoua*, which is yet better to inoculate

inoculate Peaches upon than the sweet Almond before-mentioned; these Almonds should not be lay'd to sprout, but put into the Ground in the Spring, they shoot vigorously, and make a handsome Plant in a Summer.

But as Almonds will not easily bear transplanting without extraordinary Care, I would advise that we set them in such Places in the Nut where we design them to grow, and inoculate them there, without running the Hazard of transplanting.

The bitter Almond is by no means good to inoculate Peaches upon, tho' that sort is more hardy, and will transplant better than the sweet Almond.

Quer. Whether if we inoculate a Peach upon the Dwarf Almond it will not take? If it will, I suppose one may have Peach-Trees of a very small Size, which might be kept in small Pots, and be very agreeable at a Table.

The pruning of Peaches ought not to be 'till the Blossoms are so much swell'd, that we can discover the bearing from the false Blossoms: Which in some Trees may be done at the End of *February*, and others not 'till *March*.

Note, What is call'd a false Blossom is discover'd by Mr. *Fairchild* at *Hoxton*, to be a Male-Blossom, which from good Observation proves to be differently made from those Blossoms which bring the Fruit: Our Author says, we should defer pruning 'till we can discover which Blossoms are Male, and which otherwise; for, says he, the false
Blos-

soms never bear Fruit, and therefore should be cut off ; but there was little of the Generation of Plants known when he made his *Memorandums*. I conceive they are as necessary to be left upon the Tree as the others, and are of use to make the Tree bear as well as the false Blossoms of Cucumbers, Melons, Gourds, &c. which I have mention'd in my *New Improvements* ; but however, I think it necessary to delay pruning of Peach-Trees which are tender, 'till the Sun has gain'd a little Strength, for they are too apt to shoot vigorously, and late pruning prevents their over Luxuriance ; and should we prune them when the Frosts have any Force, they would be endanger'd. But to return to our Author, who says,

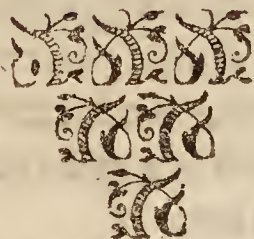
We may top the bearing Branches, or prune them according to their Strength, which is the way to have good Wood and good Fruit ; the strongest Shoots may be left a Foot long or more, and from thence we may expect good Wood to fill our Wall, which a Peach-Tree often wants, and should as much as possible be fill'd up with young Shoots, for 'tis them alone that bear Fruit. When a Shoot is of a middle Size, 'tis commonly furnish'd with Fruit-Buds, and should according to its Strength be shorten'd ; and the smallest Shoots which have Blossom Buds upon them should also be cut to convenient Length, that the Fruit may be large, for one or two good Fruit is worth five or six which have had ill Nourishment.

After the Spring-pruning of Peaches, the Trees must not be touch'd with a Knife all
the

the Year, unless such Shoots as cannot conveniently be lay'd to the Wall, the Spring-pruning being as much as a Peach Tree can suffer without declining in its Health. I cannot by any means agree with those who cut these Trees (that are nurs'd against Walls) down once in four or five Years, to make them renew their Wood; a Tree ought to fill the part of the Wall allotted for it, and it is the Fault of the Manager if it does not, unless the Distemper lies at the Root.

If close pruning be at all allowable, 'tis during the first two or three Years after planting, that the Bottom of the Wall may be well furnish'd; and tho' this pruning is often practis'd, yet 'tis not every where that we find the Effect it ought to have, for too many lead the Shoots upright, which should be spread Horizontally, and by that means leave the Wall naked at Bottom, and in a few Years tell us the Wall is too low for the Tree; this is a very great Fault.

In this first pruning, some are so favourable to spare the Branches which have Blossoms upon them, but 'tis an unreasonable Practice; for we never have a good or lasting Tree that is suffer'd to bear so early.



Curious and Useful Observations, relating to the Management of Plumbs.

THE Plumb is a Fruit which is as much in Esteem as any Fruit whatever: Its great Varieties, either for eating raw, bak'd, or in Sweet-meats, makes it deservedly take Place among our best Fruits.

We have Plumbs from *July* 'till the End of *October*, and even later; but the Sun at that Season of the Year has so little Force, that we cannot boast of any good Fruit of this Kind after *October* is pass'd.

The earliest Plumb in *France* is call'd *Ceriset*, or Little Cherry Plumb; we have two sorts of it, one red, and the other white, which both part from the Stone, like the Damask Plumb; and tho' these are Wildings, they deserve a Place in our Gardens, being well-tasted, and coming very forward; they are raised by Off-sets, and from the Stone, and without grafting come to bear very well.

2. *Prune de Catalogne*, i. e. the *Catalonian* Plumb, is large, white, and very forward, but does not leave the Stone; 'tis a Wilding, and bears well without grafting.

3. *Prune de St. Cyr*, i. e. the *St. Cyr* Plumb, is a black Damask, and early ripe; it has a pleasant Juice, and leaves the Stone; it may be raised by Suckers.

4. *Gros Damas Noir hâtif*: i. e. the Great Black Early Damask Plumb, leaves the Stone dry,

dry, its Flesh is yellow, and is one of our best Fruits; it must be grafted and planted against a Wall, for in the open Air it's subject to drop its Fruit.

5. *Le Petit Damas Noir*, i. e. the Little black Damask Plumb, is the next ripe, and is a great Bearer, may be raised from Suckers, or from the Stone, and requires no grafting; 'tis every where allow'd a good Plumb.

6. *Prune de Taureau*, i. e. the Bull Plumb, or by some call'd *Poitron*, is a large long Fruit of a brownish red, but does not part from the Stone; it bakes well, and makes good Sweet-meats, but I cannot commend it to be eaten raw; however, as it comes early, and bears well, we should not be without it.

7. *Prune de Damas d'Italie*, i. e. the Italian Damask Plumb, nam'd by the *Italians*, *Bou-boucone*, is of a Violet Colour, large, and early ripe; it leaves the Stone, and has an excellent sweet Juice; 'tis one of the best Plumbs, and not very common, it is not subject to run.

8. *Perdrigon de Cernay*, is also call'd the Double Damask and *Passevellours*; this, thro' Mistake, has been taken for that Plumb call'd *Prune de Monsieur*, but it is not; however the Fruit is fair and large, and of a fine Violet Colour, well powder'd, and comes early; the Stone is large as well as its Wood and Leaf, it opens well, leaving the Stone dry, but its Flavour is none of the best, yet one cannot well be without it, being a great Bearer.

9. *Prunes de Damas*, i. e. the Damask Plumbs, are red, white, and of a Violet Colour; they are all very good, leaving the Stone, and

leaves the Stone, and bears well ; it has a rich Juice, and is eaten in *October*, and some time after.

21. *Prune Imperiale, i. e.* the Imperial Plumb, is of four sorts: The red Kind is large, long, and very much powder'd ; it is an ancient Fruit, and very good, we cannot well have too many of them, for they dry very well in an Oven, and are no less to be commended raw.

22. *Imperiale blanche, i. e.* the white Imperial Plumb, is of the same bigness and length with the former, but not so good, being some Years meally and dry.

23. *Imperiale noir, i. e.* the black Imperial Plumb, comes late, and is a very good Fruit ; it comes clean from the Stone, as well as the others of its Tribe.

24. *Imperiale tardive, i. e.* The late Imperial Plumb, is the biggest and the best, it is very much powder'd, and bears very well ; 'twill last 'till towards the End of *October*.

25. *Prune Royale, i. e.* the Royal Plumb, is a large, fair, round Plumb, of a bright red, its Stalk long, the Fruit very much powder'd, and very well tasted ; 'tis one of the best.

26. There are seven sorts of Damask Plumbs, which come later than the others, and are somewhat more rare ; the first is call'd *Damask Musquée, i. e.* the Musked Damask Plumb, is the same with the *Cypress* or *Martha* Plumb ; it is black, and very much powder'd, rather flat than round ; its Taste is particular and rich, and may be rank'd among our first Plumbs.

27. *Damas Orangé*, i. e. the Orange Damask Plumb, is streak'd with red, and is somewhat like the little *Mirabelle Plumb* : So that some call it the *red Mirabelle*, both having a Stone much alike, i. e. small, and of a longish Make.

28. *Gros Damas Verd*, i. e. the great green Damask Plumb, is round, and always of a green Colour, when it is ripe ; it leaves the Stone, is very fleshy, and has an extraordinary rich Flavour. Q. Whether this is not the *Green Gage Plumb* in the *English Catalogue* ?

29. *Le Petit Damas Verd*, i. e. the small green Damask Plumb, is a good Bearer, and makes excellent Sweetmeats ; it is always green colour'd when 'tis ripe.

30. *Damas Gemelle*. i. e. the Twin Plumb is very much powder'd, pretty large and long, and of a sweet Water, the Fruit always comes double ; it is very rare.

31. *Damas blanc tardif*, i. e. the late white Damask Plumb, is rather flat than round, its Juice is very sweet, and it comes clean from the Stone like the other Damasks.

32. *Damas d'Espagne rouge*, i. e. the red Spanish Damask, is round, very much powder'd, and large ; it quits the Stone readily, but is not so high flavour'd as the others, but it is an admirable Plumb for bearing, and is very beautiful.

33. *Prune de Moyeu*, i. e. the Yolk of Egg Plumb, is of two kinds, one comes from *Burgundy*, whose Wood is thorny, and the Fruit longish like an Heart, yellow without and within, is excellent in Sweetmeat and Marmelade,

44. *Prune Transparente, i. e.* Transparent Plumb, so call'd because, if we hold it to the Sun, one may see through it, so as to discover the Stone; 'tis very rare, and an handsome large Fruit, long and white, 'tis very good, and parts from the Stone.

45. *Prune Virginale, i. e.* the Virginal Plumb, is a sort of large white Damask, very much esteem'd in *Anjou*: It leaves the Stone, and is one of the best Plumbs; 'tis somewhat like the *Abricot Plumb* brought from *Tours*, but is a little whiter without and within.

46. *Mignonne, i. e.* the *Minion Plumb*, is pretty large and long, white streak'd with red, and opens well, its Flesh is delicate, and its Water very sweet; 'tis highly esteemed about *Touraine* in *France*, where it gain'd the Name *Mignonne, i. e. Favourite*, for its good Qualities. It bears very well, and holds a long time ripe upon the Tree.

47. *Reine Claude, i. e. Queen Claudia Plumb*, is a sort of large white Damask almost round, it ripens pretty late, and its Flesh is firm and thick; it quits the Stone, and its Juice is richly sugar'd; 'tis highly esteem'd.

48. *Prune de Pologne, i. e.* the *Polonian Plumb*, is white, large, and longish, it opens well, and is very good; it is somewhat like the white Imperial, but much better.

49. *Prune de Suisse, i. e.* the *Switzer's Plumb*, or by some call'd *l'Altesse*, is almost made like the Imperial, but narrower, longer, and a little pointed; 'tis of a Violet Colour, and very much powder'd; it leaves the Stone, comes late, and yet ripens well.

50. There

50. There is also another *Polonian Plumb* of a Violet Colour, very much powder'd pretty large and long, almost shaped like the *St. Catherine*; the Flesh is yellow and very well tasted, tho' it is one of the latest Plumbs.

51. *La Prune Date*, i. e. the *Date Plumb*, is a sort of late Imperial; there is the white and the red; they open well, and keep a long while ripe upon the Tree, and after they are gather'd, the Flesh is very firm, and is good raw or dry'd.

52. *Prune de St. Catherine*, i. e. *St. Catherine's Plumb* is white, large, and more flat than long; it rarely leaves the Stone, but is very good to eat raw, being one of those which has the sweetest Juice, altho' it ripens late; it dries very well, and without much Trouble, being subject to dry even upon the Tree; this sort comes better from a Sucker than by grafting, and we should have a good many of them.

53. *Damas d'Espagne*, i. e. the *Spanish Damask Plumb*, is of two kinds; one is quite round, and the other a little longish; they are both black, and come very late, but they open well, and are very good.

54. *Rognon de Coq*, i. e. the *Cock's Kidney*, is a small white Plumb, streak'd with red, a little longish, and shap'd like a Kidney; but it cleaves to the Stone, and comes late; 'tis a great Bearer.

55. *Prune de St. Julian*, i. e. the *St. Julian Plumb*, is of a dark Violet Colour, very much dusted; this does not quit the Stone, and dries upon the Tree, and sometimes re-

mains there 'till the hard Frosts begin ; 'tis a good Plumb, and comes from a Wilding.

56. *Prune Norbette*, i. e. the *Norbet* Plumb, is like one of the late small Damask Plumbs, which do not part from the Stone ; it eats well raw, but bakes much better ; it makes excellent Pruants of a fine blue Colour.

57. *Diaprée noir tardive*, i. e. the late Black Diaper Plumb, is an excellent Fruit, a little rounder than the early Sort ; 'tis eaten in *October* and *November*.

58. *Gros Damas Violet Tardif*, i. e. the late Large Violet Damask Plumb, comes from *Tours*, is a very good Fruit, and leaves the Stone ; it ripens late.

59. *Gros Damas rouge de Tours*, i. e. the Great Red Damask Plumb, brought from *Tours* in *France*, ripens its Fruit late ; it leaves the Stone, and is very well tasted ; this holds in eating among the last Plumbs.

60. *L'Imperatrice*, i. e. the *Empress*, is a large, round, Damask Plumb, of a Violet Colour, very much powder'd ; 'tis a good Bearer, its Flesh yellow, and very agreeable ; 'tis one of the latest ripe.

61. *Perdrigon Nantois* is a large red Damask that comes late ; it is of a long Make like the Date Plumb, but less pointed : I reckon it one of the best, and it keeps upon the Tree 'till the great Frosts.

62. *Gros Damas Violet*, the Large Violet Damask Plumb, is a long Fruit, well powder'd, is extremely in Esteem for its Goodness, its lasting, and good bearing. *N. B.* By the powdering and Dust of a Plumb is meant what

what the *English* Gardeners call the Blue of a Plumb.

63. There is a Plumb call'd *Prune Abricot-tée Jaune*, which is large, and ripens late, is almost round and well powder'd; 'tis yellow within and without like an Abricot, and is one of our best Plumbs.

64. *Prune Supreme*, i. e. the *Supreme* Plumb, is one of the largest, and is white streak'd with red, of a long Make, and comes late, the Leaf is extremely large. This Fruit does not part freely from the Stone, and in my Opinion, is rather to be chosen for its Beauty than its Goodness.

65. *Le Gros Damas noir tres tardif*, i. e. the latest great black Damask Plumb, does not part freely from the Stone, nor is it so high flavour'd as the former Plumbs; however, we should have some of the sort, as the Fruit is beautiful and lasts a great while.

One might yet mention great Varieties of Plumbs, which are frequent enough about *Paris*; but I shall content my self with those already observ'd, which will furnish a sufficient Variety for any Garden of the best sorts.

The best Stocks to be put in Nursery for grafting upon are the Off-sets of the *Black Damask*, and the *St. Julian*, whose Sap is sweeter than that of other Plumb-trees, which is commonly too sharp for Grafts to take upon; the Grafts, I mean, are in the Cleft, and not in the Bud, as some might conjecture.

The *St. Julian* Plumb is indeed the surest for budding upon, and the Fruit grafted upon it is more melting than those grafted upon

other Stocks ; the black Damask has a drier Juice, and therefore the Bud is not so proper for it.

Plumbs require a Soil rather dry than wet, or enclining to Sand than Clay. A black Sand is the best of all for them ; they bear sooner and better, and bring their Fruit extremely well tasted.

We may cultivate Plumbs either in Standards, Dwarfs, or against Walls ; the blue *Perdrigon* should always have a Wall to prevent the shedding of its Fruit, which it is very subject to do in the free Air. This Plumb loves the rising Sun, rather than the Sun at full South ; for the latter dries the Fruit too much, and makes it fall as soon as 'tis set.

In pruning of Plumbs, we must have great regard to their Strength or Weakness ; and as that is to leave more or less Wood upon them, the large Shoots must be left of a good Length, and the middle size Shoots must be left almost entire, that the Tree may bring Fruit soon ; especially we should leave the Shoots of Plumb-Trees very long in stiff heavy Soil, where they are apt to shoot too much and bear little ; in that Case pruning close would make them shoot in a rambling manner, or subject them to Distempers. Prune a Plumb as little as may be in a Clay, or wet Soil ; wound those Fruits which are enclined to Gum as little as possible, among which is the Plumb, which is very subject to canker, and thereby distemper its whole Sap.

For Standard Plumbs, we should let them shoot at their pleasure, only minding to take away

away the false Wood and the Suckers from them ; the false Wood may be distinguish'd from the rest by its being long, thin, and of a greenish Colour.

When Plumb-trees begin to decay and lose their Shoots, we must cut them down, a little above the Graff ; they will re-spring with Strength, and bring us Fruit the second Year.

Where we have to deal with Wildings in this Case, such as the Damask, St. Catherine Rochecorbon, &c. we may leave a few of the Suckers about their Roots, but not too many, lest we ruin the old Root ; for every one of these Suckers draw from it, and impoverish it, 'till at length it is quite starv'd.

Memorandum : When we have a strong Ground, which subjects some of our Plumbs to run into Wood, I would advise, that such as will do without Walls should be twisted about a Set of Poles, as I have mentioned in *December 1721* for Pears, for the bending their Shoots will check the Sap, and bring them to Fruit-bearing without pruning, and then they will not be subject to gum or spoil. I am so much enter'd into this Thought, that I have began to try Mr. *Heron's* Experiment of twisting of Trees thus, and I hope some few Months will satisfy me of its use to Plumb-trees, Peach-trees, Abricots, and those sorts which, if they are let alone, are apt to shoot with extraordinary Vigour.

Observations and Experiments relating to Cherries.

A Cherry requires a light sandy Ground, which brings it to bearing sooner, and makes it yield better Fruit, and in greater Abundance than it would do in stiff Land ; at the same time, we do not say that this Fruit will not bear at all in wet or heavy Ground, but where that happens, it is the most subject to drop its Fruit.

If we are minded to have dwarf Cherry-Trees, we should not by any means graff them upon the wild black Cherry, but upon Cherries which are already graffed, chiefly the *Morello* ; for the black Cherry is too strong a Shooter, and the *Morello*, which is a wild Kind, though we cultivate it by graffing, brings its Shoots with less Vigour, and bears soonera nd closer to the Ground ; but for Standard Trees, the black Cherry makes the best Stocks for Graffing, and brings its Fruit larger and better.

We may graff Cherries in the Cleff or inoculate them, but the last Way is much the best, when the Trees are in their *Midsummer* Shoot, and then we are not in much Danger of being injur'd by the Gum ; but for Graffing in the Cleff, we must do that early in the Spring, that is, about *February*, or at the latest a few Days in *March* ; it must be done before the Sap rises, or else our Graffing is to little purpose.

Some

Some have experimentally found, that a Cherry does better grafted in Autumn than in the Spring, and chiefly if we set our Graff near the Ground, the Graff then takes immediately, and is so fix'd, that the following Spring it shoots with extraordinary Vigour, abundantly surpassing those that are grafted in *February* or *March*.



Observations relating to the Abricot.

WE shall leave the Abricots commonly inserted in our *English* Catalogues, and mention only two sorts, which are very remarkable now in *France*. There is an Abricot all white without and within, which parts freely from the Stone, and is well flavour'd ; about *Paris*, the Eastern Aspect is better for it than the Southern Sun ; the Stone is very small, and the Fruit is almost as forward as what is call'd the *Masculine Abricot* in the *English* Catalogues, especially in dry sandy Ground.

What is meant by a Male Peach, a Male Plumb, or a Male Abricot are such Fruits, as do not quit the Stone freely.

In *France* there is an Abricot much esteemed, whose Flesh is yellow, and the Outside redder than the others ; it is said to be one of the Males, because it does not leave the Stone, the Shell of the Nut always adhering to the Flesh of the Fruit ; the Juice is extremely

remely good, and the Kernel is as delicious as the sweet Almond.

If we would have large Abricots, and a great deal of Fruit, we should cut them down from time to time, whether they are against Walls, in Dwarfs, or in Standards; for they are very ungovernable; their Shoots are commonly more vigorous than any others, except those of the Vine; and when they are against a Wall, or in a Dwarf, we are necessitated to prune them, or else they outgrow their Compass: But I find by Experience, that pruning of such Wood has the same Effect upon Abricots, as it has upon Plumbs; and therefore, what can be decently left growing should be spar'd 'till we cut down the Tree quite; but we are sure of this, that the Abricot will shoot three times more vigorously in a Clay, than it will do in a dry Sand; I think a black Sand, or heathy Ground the best for it; it will bear plenty of good Fruit there, and make smaller Shoots than in stiff Land; and therefore requires less pruning, and will live in better Health.

An Abricot may be grafted upon a Plumb-Stock, or a Stock raised from an Abricot-Stone; the last, I think, is the best, because it is not subject to sling out Suckers from the Root.

If we are disposed to bring our Abricots sooner by a Fortnight than they usually ripen, we must graff them upon Almond Stocks, or to keep them more backward in their ripening, we may put them against North-Walls; but those which are exposed to the North are not so well colour'd as those which

which have other Exposures ; however, as the North Exposure brings the Tree later into Sap than others, the Blossoms are in less Danger from the Frosts of the Spring. I have observed, that those Abricots upon a North Wall bring their Blossoms about three Weeks later than the Trees that are exposed to the South Sun.

The Syrup made of Abricots, being well mix'd with Water, makes an excellent refreshing Drink.



To Mr. R. W. A second LETTER concerning Fruit-Trees dropping their Blossoms: With some Thoughts how it may be prevented.

S I R,

‘ YOUR Love for Gardening is so expressive in your Letter to me, that I am fond of an Opportunity of lending you what Assistance I can towards putting your Trees in a Method of rewarding your Labours with good Fruit. The Hints which I drop’d on this Occasion in my Remarks for *January*, are what, I think, may contribute something towards their Help ; but I shall now open the Case a little more plainly than I did before, from Experiments that I have made.

‘ *First*, I have observ’d that Trees which have been much prun’d are subject to shoot

' unequally, that is, some Parts will shoot
 ' more vigorously than the others; or in
 ' some Cases all the luxuriant Branches will
 ' be on one side, while the Bearers lie in a
 ' little Compass on the other side of the
 ' Tree. Now where it happens that the vi-
 ' gorous Shoots are very prevailing over the
 ' bearing Branches, the blooming Branches
 ' commonly drop their Blossoms, either be-
 ' fore they set for Fruit, or else drop the
 ' Fruit that does set upon them about *July*,
 ' which is the time of a Tree's second shooting;
 ' and this for the same Reason that the wea-
 ' ker Branches of a Tree are made to blos-
 ' som; for the luxuriant Branches, when
 ' they happen to get the better of the smaller,
 ' imbibe all they can of the Juices of the
 ' Tree, and rob the smaller Shoots of that
 ' Sap which should have supported their
 ' Strength; and Experience teaches us, that
 ' by weakening any Vegetable of the great-
 ' est Vigour, we bring it to bear Fruit.

' Mr. *Fairchild* observes very well, that
 ' when by this means one Part of the Tree
 ' is brought to put out Blossom Buds, if the
 ' other Part remains to shoot vigorously,
 ' those vigorous Shoots will draw so much
 ' of the Sap to themselves, that there is not
 ' enough left circulating in the bearing Part
 ' to support the Blossoms, and therefore they
 ' drop; or else should they not be so much
 ' impoverish'd at the blossoming Time as to
 ' drop them; yet when the Tree comes
 ' to make its second Effort in *July*, the bear-
 ' ing Branches might then be so slenderly
 ' nou-

‘ nourish’d as to occasion the falling of the
 ‘ Fruit that was set in the Spring.

‘ Now in such a Case there are many, who
 ‘ would prune the luxuriant Branches within
 ‘ three or four Buds, to prevent this Mis-
 ‘ chief ; but such Pruning as that provokes
 ‘ the pruned Part to shoot still more vigo-
 ‘ rously, and there is still greater Expence of
 ‘ Sap than there was before ; and then the
 ‘ bearing Part becomes still a greater Suffer-
 ‘ er, and often dies. When Plants are thus
 ‘ thro’ ill Management at first brought to such
 ‘ an unequal Method of shooting, I would
 ‘ either prune very little of the vigorous Shoots,
 ‘ or bend them down to check their Luxuri-
 ‘ ance without pruning at all ; and then I
 ‘ judge that the Circulation of Sap in the
 ‘ Tree would become more regular, by the
 ‘ checking the strong Branches, the weak
 ‘ ones would have a greater Share of Nou-
 ‘ rishment, and even the strong Branches
 ‘ would be brought into a bearing State ; but
 ‘ this is only with regard to Dwarf Trees,
 ‘ or Walls, or Espaliers, where the little
 ‘ Room we have must be employ’d to the
 ‘ best Advantage ; when this is our Case, I
 ‘ think we should not so much study the great
 ‘ Regularity or Figure of our Trees, as
 ‘ how they may bring Fruit in abundance,
 ‘ and sometimes their Look will be rude
 ‘ enough.

‘ In some of my Monthly Papers I
 ‘ have instanced a Method used by Mr.
 ‘ Greening of Brentford, for making Fruit-
 ‘ Trees bear well ; and, I think, in the Ja-

‘ *many* Remarks, you may find something for
 ‘ your purpose.

‘ A Standard Tree, if it likes the Earth,
 ‘ has in its self a natural Regularity with-
 ‘ out pruning; and we observe, that the great
 ‘ Branches, if we allow them Time, will bear
 ‘ well, especially if we cut some of the
 ‘ great Roots after *Midsummer*, for those
 ‘ great Roots are the Cause of the Over-vi-
 ‘ gour of the Shoots; so that if Pruning is
 ‘ necessary, I think it should be rather in
 ‘ the Roots than upon the Branches; for
 ‘ the Earth will sooner heal a Wound than
 ‘ the Air; and when the Cause is removed,
 ‘ the Effect ceases. The Sum of what I have
 ‘ observed in the common Way of Pruning
 ‘ mounts to this, that *in much Pruning there is*
 ‘ *much Mischief*.

‘ Mr. *Heron's* Letter to me in the Remarks
 ‘ of *December* may yet help you; for whe-
 ‘ ther it be from Pruning or Frosts, that your
 ‘ Blossoms do not hold upon the Trees, the
 ‘ Practice of his Method will sufficiently
 ‘ arm against both.

I am,

S I R,

Your humble Servant,

R. Bradley.

P O S T S C R I P T.

‘ **W**H A T you have mentioned concern-
‘ ing planting Trees upon high Grounds,
‘ depends entirely upon Observation ; and
‘ my *Memorandums* of that kind are so ma-
‘ ny, that I shall take another Opportunity
‘ of bringing them to publick Use.

‘ The following is a Piece concerning the
‘ Improvement of Gardening, by prescribing
‘ a Method how Gentlemen may distin-
‘ guish between the regular practical Gar-
‘ deners, and such as have no reasonable Pre-
‘ tence to the Management of Gardens.

‘ The worthy Gentleman from whom I
‘ receiv’d the following Propositions, very
‘ judiciously considers, that the chief Motive
‘ which has prevented the Gentlemen from
‘ the Love of Gardens has been, that they
‘ have employ’d Persons that were inaccurate
‘ in their Judgment, and thereby have had
‘ their Plants destroy’d ; and that such Gar-
‘ deners, who really deserv’d by their Inge-
‘ nuity the Favour and Esteem of the Gen-
‘ tlemen, had not an Opportunity of shew-
‘ ing themselves in their true Lights ; but I
‘ doubt not but a Scheme of this Nature may
‘ be some Encouragement to the Gentlemen
‘ to improve their Gardens, and promote
‘ the Interest of those who make it their Bu-
‘ siness to study Gardening, was this Propo-
‘ sition rightly set on Foot.

‘ As Gardening hath been the Study and
‘ Practice of the Ancients as well as Moderns,
‘ and but very few have arriv’d to the Per-
‘ fection of it, tho’ there are many Pretenders
‘ to it ; by which means many Noblemen
‘ and Gentlemen, after a very great Expence,
‘ fall

‘ fall short of their Expectations, by employ-
 ‘ ing these ignorant Pretenders; therefore
 ‘ the following Scheme is propos’d for a
 ‘ general Service to all Lovers of Garden-
 ‘ ing.

‘ 1. That as there is a Corporation of
 ‘ Gardeners established for the good Rule and
 ‘ Government of the City of *London*, and
 ‘ six Miles about, it may be extended all
 ‘ over the Kingdom, for the Benefit of Ser-
 ‘ vants, (which at this time is grown to be
 ‘ the greatest Objection and Discourage-
 ‘ ment of able Men and Gentlemen, as well
 ‘ as others, who are Delighters in the way
 ‘ of Gardening) that every Person who has
 ‘ serv’d his Time to a Gardener, and can
 ‘ give an Account, by his own Genius, how
 ‘ far he can operate in the Art of Garden-
 ‘ ing, to be examined by the Masters of the
 ‘ Hall, who shall, upon his Examination,
 ‘ have by Name enter’d in the Company’s
 ‘ Book, to what Part of the Art he is qua-
 ‘ lified, and from thence have a Writing (or
 ‘ *Diploma*) of his Performance; by which
 ‘ means every Gentleman then may be cer-
 ‘ tain, that he shall entertain a Servant that
 ‘ is capacitated to perform the Part he
 ‘ undertakes; which will prevent intirely
 ‘ those that are only Pretenders to the Art
 ‘ from being employ’d, who commonly do more
 ‘ Damage to a Garden in one Year, than can
 ‘ be retriev’d in three: And by such Regi-
 ‘ sters, any Gentleman, tho’ at a Distance,
 ‘ may, by Letter to the Clerk of the Com-
 ‘ pany, have a Person recommended, as will
 ‘ answer all his Expectations.

‘ 2. By

‘ 2. By this means all Persons will have
 ‘ Men recommended, that are not only of A-
 ‘ bility, but also of Integrity ; for ’tis to be
 ‘ presum’d, there will be none recommended
 ‘ but those that have actually serv’d their
 ‘ Time faithfully, and are also qualified for
 ‘ each Part required.

‘ 3. If this Method was once taken, it
 ‘ would make all Servants more diligent in
 ‘ their Places ; and as they would employ
 ‘ them but by such Certificate, all then would
 ‘ endeavour to live in their Places to me-
 ‘ rit it.

‘ 4. For in many Cases of Apprentices in
 ‘ Gardening, in the Term of their seven
 ‘ Years, they cannot have the same Oppor-
 ‘ tunity of making themselves Masters of
 ‘ the Art (as in other Trades, whose Ap-
 ‘ prentices are daily in the Experience of
 ‘ the Art ;) for in the planting and pruning
 ‘ of Trees, and of Seeds or Roots, ’tis not
 ‘ above seven times in the whole Term of
 ‘ Apprenticeship.



*Remarks upon the Weather and Pro-
 duce of this Month.*

THE Beginning of the Month was wet,
 but the Days moderately warm : About
 the Tenth it began to be windy, and the E-
 venings cold and wet ; but about the Middle
 of the Month it changed to fair, and lasted so
 to the End, except only some gentle Showers.

Our

Our Gardens this Month have very little in them of Natural Things ; the Ground being now prepar'd for fresh Crops, there is nothing worth mentioning, but what entirely depends upon the Skill of the Gardener.

At Mr. *Millet's*, at *North-End* near *Fulham*, I have seen Cherries and green Abri-cots this Season.

This Month I have had Cucumbers and Kidney - Beans in my own Garden ; and Mr. *Thomas Fowler* at *Stoke-Newington* has now the former, because he had Courage enough to venture out of the old Way.

Mr. *Telende* has now at Sir *Matthew Decker's* at *Richmond* in *Surrey*, a great Number of the *Ananas*, or Pine Apples, in Blossom.

Forced Asparagus comes now stronger and better, than it did in the preceding Month ; and we have some of the *Michaelmas* Radishes begin to come in.

We have very good young Salads.

End of the Month of February.



E R R A T A.

P. 256 and 257. read *Bunch* for *Grape*, and *Berry* for *Kernel*.

A GENERAL
T R E A T I S E
O F

Husbandry and Gardening,

For the Month of *March.*

CONTAINING

Such Observations and Experiments as
are New and Useful for the Improve-
ment of Land.

W I T H

An Account of such extraordinary In-
ventions, and natural Productions, as
may help the Ingenious in their Stu-
dies, and promote universal Learning.

*To be continu'd Monthly, with Variety of
curious CUTTS.*

By R. BRADLEY, *Fellow of the
Royal Society.*

L O N D O N:

Printed for J. PEELE, at Locke's Head, in
Pater-Noster-Row.

(Price One Shilling.)

TABLE

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T O

Sir Hans Sloane, Bar. M. D.

Fellow of the College of Physicians, and of the Royal Society, and Member of the Royal Academy of Sciences at *Paris*.

T H I S

T R E A T I S E

O F

Husbandry and Gardening,

For the Month of *March*,

Is, with the greatest Respect,

Inscrib'd by

His most Obliged

Humble Servant,

R. Bradley.

My friend, please find the
following list of the
names of the persons who
are members of the
Society of Friends in
the United States.

1811

TABLE

OF

Members and Friends

of the Society of Friends

in the United States

in 1811

by the

Committee

R. Barclay



A GENERAL
TREATISE
OF
Husbandry and Gardening,

For the Month of *March.*

I Shall introduce my Papers for this Month with some very curious Observations, communicated to me by Mr. *Thomas Fairchild* of *Hoxton*, in order to the Improvement of Plants.

To Dr. Bradley, F. R. S.

S I R,

I HAVE lately receiv'd the enclosed from a very curious Gentleman, and have follow'd his Directions so far, to try the

‘ the different sorts of Graffing, which you
 ‘ will find mention’d in his Paper; but you
 ‘ know very well, that in such a Case as this,
 ‘ it is necessary to make Trials in different
 ‘ Places of the same Thing, that we may be
 ‘ sure whether what we are about will suc-
 ‘ ceed or not; for some Accident or other
 ‘ may make an Experiment hit well in one
 ‘ Place, when it may miscarry in another. I
 ‘ desire therefore you will, in as many Places
 ‘ as possible, make the Experiments mention’d
 ‘ in this Paper; for I have Reason to doubt
 ‘ whether many of them will succeed; for
 ‘ some of them seem to be unnatural, and
 ‘ have not Affinity enough to join together:
 ‘ By this we may know, whether we have
 ‘ lost any thing of Moment, that was pra-
 ‘ ctis’d by the Ancients; or whether they
 ‘ were not wrong in some Things they have
 ‘ set down in their Books.

I am your humble Servant,

Hoxton, March 5.

1721-2.

Tho. Fairchild.



A Letter to Mr. Fairchild at Hoxton, concerning the propagating and hardening of Exotick Trees by Graffing.

Mr. Fairchild,

Febr. 24. 1721-2.

I Write you this, to claim your Promise of trying any Experiments that I shall direct you in Writing. But I shall not treat the most rational Gardener I have ever met with, in the same manner I would an ordinary one: Nor shall I content myself with barely directing what I would have tried; but I shall also explain to you the Reasons I go upon, and the End I propose by such like Experiments. You know I have been some Years propagating and collecting all the several Species and Variations of Trees, both *English* and Foreign, that I can anywhere procure, and make to live abroad with me in Winter: The Pleasure and Usefulness of which, I need not explain to you. And I was last Summer considering of the several Ways of raising and propagating of Trees, and particularly by uniting them together; whether by graffing in the Cleft, in the Bark, by Application to the Side (which I think you call Whip-grafting) and by inarching, and that too either by Application to the Side (as is now of late practis'd) or a Top in the Cleft, (as was practis'd by the Ancients) or inoculating, or
 bud-

budding. For as to the Method of graft-
 ing by Incision, I do not know what to
 think of that, as it rests on the Authority
 of a *Rosicrucian* Philosopher. First then, I
 observ'd, that it was a Maxim received a-
 mong you, founded on Experience, that
 Trees of the same Genus or Family might
 be united together, (a Truth that was very
 well known to the ancient Gardeners) and
 by observing particular Instances, I found
 that those of the more general Genus's, or
 remoter Kindred would do upon one an-
 other also; and that for Instance, not only
 all sorts of Peaches would do upon one an-
 other, and all sorts of Apples, but Peaches
 too would take upon almost any sort of
 Plumbs; Pears upon Quinces as well as
 Pears, and even on the White Thorn and
 the Quick-beam: Almonds upon all sorts
 of Plumbs as well as Peaches, and some say
 on the White-Thorn: Medlars and Aza-
 roles on one another; and upon the Quince,
 the White-Thorn and the Pear. And I ob-
 serv'd the same to be true likewise in Fo-
 rest-Trees; and that the Ashes, for Example,
 would do upon one another, and so would
 the Oaks; nor would the one's being ever
 green, and the other not, alter the Case; as
 you shew'd me in the Experiment of the
 Live Oak of *Virginia* grafted upon the com-
 mon Oak. From these Observations, I con-
 cluded, that several Exotick Trees that were
 hard to propagate might have Stocks found
 they would grow upon; and particularly,
 I recommend the Turpentine to you (which
 you complain'd you could not propagate)

to be grafted upon the *Pistaccia*; which you
 say did take, but went off again, doubtless
 because your Stock was too small; (the *Pistac-*
cia being very pithy when 'tis small.) I
 hope when your Stocks are a little bigger,
 it will have the desired Effect, because *Tour-*
nefort ranks them both under the same Ge-
 nus, and the Ancients used to graft the *Pi-*
staccia on the Turpentine, to meliorate the
 Fruit. And I hope you will go on trying
 other Things, even where the Alliance ap-
 pears remote, being warranted by the Expe-
 riments abovementioned; and so we may
 in time see how far this Matter will go.
 And tho' I know very well, that you and
 others have tried to make Trees take upon
 one another, that have no Similitude in
 the Flower, Fruit, Seed-Vessel, or Seed,
 which are the most natural Distinction of
 Plants; and have met with no Success in
 your Trials: Yet because some Ancients of
 Credit have assured us, that the Pomegra-
 nate and Carot may be grafted on the
 Willow; I beg of you to try them during
 this Season: That Tree may have some hid-
 den Relation to them, tho' not in its Seed-
 Vessel or Fruit, or may have some other
 peculiar Qualification for uniting with them;
 and if they do join it, may lead us to other
 Things. These were the first Thoughts that
 occurred to me in this Matter.

Then I observ'd further that the grafted
 Tree partook somewhat of the Stock it
 was grafted upon; that the Pear, for Exam-
 ple, grafted on the Pear, was a larger Tree
 than one grafted on the Quince. And I con-

' sider'd particularly of the Almond, which
 ' Mr. Ray says in his Time seldom produced
 ' ripe Fruit with us, as wanting a warmer
 ' Clime. But it is very well known, that
 ' since the *Jordain* Almonds have been graf-
 ' fed upon Plumb Stocks, they bear very well
 ' in *England*. And this made me suspect, that
 ' a hardy Stock might harden a tender Graff;
 ' but being unwilling to build too much on
 ' one single Experiment, I desired you last
 ' Summer to make Trials in that Way. And
 ' as the Truth of this is plainly confirmed
 ' this Season in your Garden, by the flourish-
 ' ing Appearance of the *Canary* Almonds
 ' grafted on the Plumb, while the Seedlings
 ' of the same Species of five or six Year's
 ' Growth appear all nipp'd and shrivell'd,
 ' notwithstanding the Mildness of the Win-
 ' ter; we are no longer now to doubt, but
 ' tender Trees are to be harden'd, to some
 ' Degree at least, by hardy Stocks. How far
 ' this Matter may be carried, can only be
 ' determined by Experiments, which, I am
 ' sure, are well worth the making, consider-
 ' ing the Advantage and Pleasure it seems to
 ' promise, by bringing new Fruit-Trees into
 ' our Gardens and Orchards, and new Forest-
 ' Trees into our Wildernesses, and Thickets,
 ' and above all, new Means of contempla-
 ' ting the Wisdom and Goodness of God, the
 ' noblest End of all Philosophy. But all we
 ' can reasonably depend upon in this Matter,
 ' is to have Trees of the same Degree of
 ' Tenderneſs with those above-mentioned,
 ' harden'd, as they are, by the like Kind of
 ' Stocks. Thus, for Example, as the *Pistac-*
 ' *cia*

' *cia* in some Years, and in some Exposures,
 ' will bear Fruit with us abroad ; could we
 ' find a proper Stock for it, why should it
 ' not be brought to bear as well with us as
 ' the grafted Almond doth ? And I shall be
 ' glad to see it tried on the Hazle, and on
 ' the Plumb. The Ancients say, it did with
 ' them on the Almonds ; if that be true, I
 ' think it must do on the Plumb too. And
 ' pray let us try it on the Walnut also. The
 ' like almost might be expected from the O-
 ' live, could we find a proper Stock for it : I
 ' am afraid the Plumb is too remote ; but
 ' perhaps it will take as well with us on the
 ' Oleaster, as it did with the Ancients, and
 ' the Oleaster is hardy. And why should not
 ' a hardy Stock bring our tenderest Figs to
 ' ripen as well in Standards, as they do now
 ' against a Wall ? Perhaps the true (or Fruit)
 ' Sycamore would be a good Stock for them :
 ' And as that bears a Fruit between a Fig
 ' and a Mulberry, it will it self perhaps take
 ' on the Mulberry, and so by Consequence
 ' would the Fig, which I shall be glad to
 ' see tried. The *Greek* Gardeners say it suc-
 ' ceeded with them. And might not some
 ' sort of early ripe Plumbs be probably found
 ' to make the latter Peaches, Abricots and
 ' Nectarines bear as well in Standards as the
 ' *Brussels* Abricot does, I think, on one
 ' Sort only to Perfection ? Though, proba-
 ' bly, from another Cause. For this, and
 ' other Purposes, I am now collecting all the
 ' sorts of Plumbs I can get ; as I hope to do
 ' another Season the Pears and Apples. For
 ' the like may be expected too of the ten-

derer Pears. And may there not possibly
 be found some small sorts of Plumbs and
 Pears, that may accelerate and meliorate
 those Fruits, as the *Paradise* Stocks do the
 Apples? Thus far the Analogy goes, and
 Nature is uniform. But let us not stick
 here, tho' the Experiment of the *Spanish* Jes-
 samine grafted on the *English* one, may seem
 to discourage us; the Effect of a more com-
 pact and woody Stock may be very diffe-
 rent; however, let us not refuse to go as
 far as we can, if we cannot go as far we
 would. Let us proceed therefore to try
 what Nature will bear: And first, I desire
 you to graff and inarch the Orange Citron
 and Lemon on the Apple, especially the
Paradise; (and if you please, on the Quince
 and the Pear:) Both those Fruits are round
 and juicy, and include callous Kernels of
 much the same Shape; and, I think, are
 much more alike, than the Haw and the
 Pear, or the Almond and the Plumb. Pray
 try likewise the Pomegranate on the Ap-
 ple, Quince, and Pear. And so likewise
 might the Papaw, and Calabash-Tree, if we
 had them. And the *Malabar* Plumb, the
West-Indian Broadleaf, the Soap-Tree, the
 Mixis, the Jujubes, and the Mango would,
 probably, do upon the Plumb. The Aze-
 darach from the Similitude of its Flower,
 according to the Method of *Tournefort*,
 might be tried on the Maple; and accord-
 ing to Mr. Ray's Method, on the Plumb,
 from the Likeness of its Fruit: And so might
 the Nutmeg and the Cinnamon on the Plumb,
 or the Walnut; and the *Cassia Fistulosa*, and
 the Tamarind on the common *Acacia*, as
 they

they are all three Siliquiferous. But I am
 afraid few or none of these are now to be
 had. I am endeavouring to procure most
 of them from abroad. The Coffee, if we
 could get it, might possibly take upon some
 of our Berry-bearing Tribe, such as the
 White-Thorn, the Quick-beam, and Berry-
 bearing Alder: And so, perhaps, would
 the Sassafras. But I desire you to try the
 Carot on the common Acacia and the Ash,
 and the Turpentine-Tree on the Plumb,
 as I have directed the *Pistaccia* to be; and
 any other that your own Reflections may
 point out to you. I hope you will be so
 kind as to try what you can this Graffing-
 Season of such as are fittest to be tried that
 Way: Those of thick and sappy Barks, in
 the Bark, others in the Cleft, and by Whip-
 graffing; and such as have thin and sappy
 Barks, by budding, in the Season for that;
 without forgetting your Method of inarching,
 which seems to be surest Way you have.
 But I should be glad to see an accurate
 Trial made of the ancient Method of in-
 arching in the Cleft; by which *Columella*
 (a Writer of great Reputation) assures us,
 that any Tree whatsoever may be propa-
 gated on any other; and appeals to Ex-
 periments for the Truth of it. I will, if
 you desire it, explain this Method of theirs
 in another Letter. Farewel.

P O S T S C R I P T.

‘ I Shall here collect together all the Ex-
 ‘ periments I have recommended to you
 ‘ above ; and I hope you will lose no Time
 ‘ in trying them.

‘ The Turpentine-Tree is to be grafted on
 ‘ the Pistaccia, and on the Plumb.

‘ The Pomegranate on the Willow, the Ap-
 ‘ ple, the Pear, and the Quince.

‘ The later ripe Abricot, Peach, and Ne-
 ‘ tarine, on early ripe Plumbs.

‘ The tender late ripe *French* Pears, on
 ‘ early ripe *English* Pears.

‘ The Carot on the Willow, the Ash, and
 ‘ the common Acacia.

‘ The Orange, Lemon, Citron, Papaw,
 ‘ and other Pomiferous Exotick Trees, on
 ‘ the Apple, Pear, and Quince.

‘ The Mixis, Azedarach, Soap-Tree, and
 ‘ other Pruniferous Exoticks, on Plumbs.

‘ The Sassafras, the Coffee, and other Bac-
 ‘ ciferous Exoticks, on the Berry-bearing Al-
 ‘ der, the Quick-beam, and the White-thorn,
 ‘ and also on the Service, since this will do
 ‘ on the White-Thorn.

‘ The Cassia Fistulosa, the Tamarind, and
 ‘ other Siliquiferous Exoticks, on the com-
 ‘ mon Acacia.

‘ I have, as far as my Haste would allow, en-
 ‘ deavour’d to confirm my Reasoning about
 ‘ these Matters by Experiments of the An-
 ‘ cients ; because, I think it more reasonable
 ‘ to credit them in Matters of Fact, than in
 ‘ any

any thing else. And some of those Writers are handed down to us for Men of great Honour, Parts, and Learning; and therefore deserve our Credit.

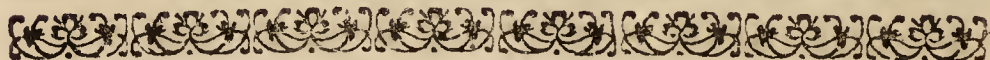
I forgot to mention a Method the Ancients had of Graffing by Terebration, or Borings, which they us'd in the Vine, and some others. They graffed the Walnut between the Bark and Wood, which I suppose is your Rind-graffing; but they say it often went off; and they rather, I think, recommend graffing it in what they call the Flesh of the Root; and they also graffed some other Trees in the Root.

I omitted to inforce the Experiment of the Orange and Lemon on the Apple, by the Example of the Ancients, who assure us, the Lemon and the Citron took with them on the Apple; and so did the Pomegranate on the Apple, and on the Quince and the Pear; and the Quince on it. The *Roman* Husbandmen graffed the Fig on the Mulberry, as well as the *Greeks*; and so they did the Mulberry on the Fig. They also propagated the Mixis on the Plumb, the White-thorn and the Service. They graffed their Apples too on the Quince, which improved them. And they tell us, that any Tree would take with them on the Quince; tho' some affirm, that the Quince would do upon nothing; which Properties they observ'd in no other Tree.

I have selected these out of a great many more Graffings that are recorded by the Ancients, as being fittest for my present Purpose; tho' perhaps the rest of them may be worth

‘ worth our considering. And I will go a
 ‘ little out of my Way to inform you of one
 ‘ thing, because it may encourage you in some
 ‘ of your Experiments of another kind. Se-
 ‘ veral of the ancient Writers of Gardening
 ‘ describe the Fruit produc’d by the Apple
 ‘ grafted on the Quince, (which they call’d
 ‘ *Melimela*, or Honey Apples) as a very dif-
 ‘ ferent Kind from those grafted on the Ap-
 ‘ ple: And they give us other Instances of
 ‘ the Fruit being alter’d by the Stock.

‘ I cannot help adding this Maxim of theirs,
 ‘ which, they say, was generally held for
 ‘ true, that any Tree was to be grafted up-
 ‘ on any other Tree which was like it in the
 ‘ Bark; but if there was a Likeness in the
 ‘ Fruit too, there could be no manner of
 ‘ Doubt of the Success. Go on, and pro-
 ‘ sper.



Answer to Mr. Fairchild's Letter.

S I R,

THE *Memorandums* you sent me, have gi-
 ven me an extraordinary Satisfaction, as
 it is plain they were penn'd by a Person of
 Learning; and I am very glad to find such as
 are Men of Letters begin to bend their Minds
 to the Study of Vegetables, and their Im-
 provement. You well observe, that by ma-
 king such Experiments, as are offer'd in the
 Paper

Paper you sent me, will discover whether the ancient or modern Authors are most to be rely'd on; for my own part, I am sensible, that many things related by the ancient Authors are Truths, but they are not without the contrary in some of their Works, which, perhaps might happen from their too great Faith in *Hear-says*; the Age was then, it may be, not so much given to Diffimulation as it has been in our Times, for which Reason, I cannot so much blame the Persons, who wrote in those Days for believing Reports which fell in their Way. The Gentleman, who proposes these Experiments to you, is, in my Opinion, much in the right to have these Trials made, that the World may be satisfied how far we may give Credit to the Ancients; or at least, that we may judge how much we have improved upon their Thoughts.

The Ancients have, without doubt, given us some good Instances of their Knowledge in Gardening; but, as I observed before, their Works are not all founded upon the same Strength of Truth; so that we have been at a loss to pick out their most beneficial Matter: But what you are now upon will help us to find out how far their Knowledge went in these Matters; and if that really proves to be great, we must next consider, whether our modern Practice exceeds that of the Ancients; or, whether we must submit to them.

You are very sensible, when we speak of the Works of Men, there is room enough to question the Veracity of the Authors; and to our Sorrow, it is much to be question'd

in the Writings of our Times, when there is so much Deceit reigns among us, that scarce is a Man to be credited by his dearest Friend, or nearest Relation, without good Witnesses: 'Tis necessary therefore, as well for the sake of the Writings of our Times, as for the explaining of the Works of the Ancients, that we follow Experience, for that will admit of no Contradiction.

I am not of the Opinion of some Men, who will not allow the modern Practice to be superior to that of the Ancients; no more than I can side with those, who will not allow, that a Scholar may become more learned than his Master, or a Son be a better Man than his Father: There is the same Chance for excelling our Predecessors or Teachers, as there is for us to be inferior to them in our Learning or Judgment; nay, the Balance seems rather to turn on the first side; for those, who have Age, Learning, and Experience on their side, give their Scholars such Rudiments for their Government, as are well digested; and if such Rudiments make their due Impression upon, or are receiv'd by the Genius of the Scholar, that Scholar may be said to enjoy in his younger Years the digested Experience of his Master, and has yet a full Age before him, to improve upon his Master's Experience: Now where the Master is good, and the Scholar receives Instruction carefully, there is little room to doubt, but the Scholar will out-do the Master, without lessening the Master's Character.

The Arts of Husbandry and Gardening have improved very much in the few Years I
have

have liv'd in the World ; and when I compare the modern Practice with that of the Ancients, there seems to be a very wide Difference between us and them ; tho' we must at the same time acknowledge, that from some of the ancient Practice we have taken some considerable Hints : But then on the other hand, the Ancients have many Things among them which Experience has prov'd to be unnatural, and many others which are not yet either set aside, or confirm'd. Now at this rate, where Men have reason to doubt of any thing of any Author, or take every thing for granted, the Case is hazardous ; therefore let us still preserve our way of Practice to speak from Experience ; your Experiments upon the Letter you now sent me, will help to explain the Matter, and open us a new Door to Knowledge.

I have kept you thus long upon this Head, because of our frequent Conversation upon Points of the like Nature. Let me now proceed to give you some few Thoughts and Observations concerning Graffing, Inoculating, and Inarching one Kind of Plant upon another.

You have told me, that the Mistletoe is of two sorts, *viz.* one Male, which never bears any Fruit, and the other Female, which will bear Berries at three or four Years old ; and, I think, you say, that the Blossoms of both are very different ; this Plant is of a very singular Nature, and deserves to be enquir'd into. I wish you would try the budding or graffing of one sort upon the other, and prepare to sow some of it at the proper Season
upon

upon Plants in Pots, that we may try it by Inarching.

I observe that it will grow by Seed almost upon any sort of Tree, tho' the Juices of such Trees as it is propagated upon are of different Natures, but it will not grow in Earth by any means ; now the Growth of this Plant upon every Tree that we stick the Seed upon, is rather grafting or budding, than sowing, if we observe the manner of its first laying hold of the Tree, it becomes incorporated with the spongy Parts in the Bark of a Tree, as an Eye or Bud does by Inoculation.

As far as I can yet think of the Matter, besides inarching one sort of Mistletoe upon the other, we might possibly make it take by inarching either sort upon any kind of Tree whatever : The Experiment will not give you much Trouble ; and to be certain whether it will succeed or not, will give me great Satisfaction ; for it will furnish us either one way or other with good Hints, as I shall take occasion of mentioning hereafter when I am certain whether it will take or not.

2dly, I would desire you to inarch the double or single Stock July-Flower upon the Wall Flower, for they seem so near a-kin, that I think it reasonable enough to try the Experiment among the rest.

If it should succeed, you may perhaps preserve the Stock July-Flowers longer than they usually last of themselves ; and it may be, you may procure such Seed thereby, as may produce some new Variety : As I doubt not but
your

your Spurge Laurel upon the Mezereon will do, if you have saved any of the Seed.

Our Curious Friend Mr. *Whitmil* of *Hoxton* shew'd me several Curiosities in grafting, which I had not observ'd before, and had extraordinary Success.

The single and double Blossom Dwarf Almonds were growing upon the Mussel Plumb; and since that will do, I am persuaded the sweet and bitter Almonds will take upon the Dwarf Almonds; and then I suppose we may have bearing Almond-Trees in very little Room; but I have hinted at that before in my Month of *February*.

I cannot help observing to you, Mr. *Whitmil's* Contrivance for such as have small Gardens, that upon a few Trees, they may have most of the best sorts of Fruit: Indeed the Trees will not last so long by such Practice; but 'tis making the most of a little, and is a great Improvement for a little Spot of Ground: He has a Peach-Tree, whereon are now growing, the Abricot, the Nectarine, and the Cherry, and the Plumb too might as well be there as the rest, as the Peach it self is grafted upon the Plumb; and the Almond likewise would do as well as any of the others; then we have on one Tree six different sorts of Fruit, some of which are pretty remote from the rest.

The Peach is rough coated, a rough Stone, and its Footstalk so short, that it can hardly be call'd so.

The Cherry, contrary to the Peach, brings its Fruit in Bunches or Clusters, hath a smooth Coat and Stone, its Stalks are very long, and the Fruit transparent.

The

The Abricot has a rough Coat and smooth Stone, and its Leaves and manner of shooting very different from the Peach ; and nothing that I can observe in it the least resembling a Cherry, but the Smoothness of the Stone.

Then the Plumb has a longer Stalk than either the Peach or Abricot ; some sorts of Plumbs have Footstalks almost as long as those of the Cherry ; the Coat or Skin of the Plumb smooth, but less transparent than that of the Cherry by means of the Dust 'tis cover'd with, which we call the Blue of the Plumb ; and then the Leaves and Shoots are different from either the Cherry, Peach or Abricot.

The Nectarine indeed has a near Semblance of the Peach in every thing but the Skin or Coat of the Fruit, which in the Nectarine is always smooth, like that of the Plumb ; but then when we compare it with the Plumb, the Leaves and Shoots are very different of one and the other ; the Stone of the Nectarine is rough, and that of the Plumb always smooth. The Almond most resembles the Peach ; its Coat and Stone is rough, and there seems little more Difference between them, than that the fleshy Part which covers the Stone of the Almond, is not for eating, as that of the Peach always is ; so that I have thought sometimes when I have eaten a Peach, whose Flesh was dry and hard, that the Kernel of the Fruit might be as good as an Almond, or that it was of the Almond Race.

Upon mentioning this to a Friend, he desires you will try the Peach, the Plumb, the Cherry, the Nectarine, and the Abricot upon the Dwarf Almond, to make them bear in a narrow Compass; for the Dwarf Almond will take upon a Plumb, and he concludes the Plumb will do upon the Dwarf Almond; and if so, the others may as well be grafted upon it as the Plumb.

Thus far for Stone Fruit one upon another, tho' there are wide Differences seemingly between one and the other; some of them almost as wide as between the Walnut and the Peach, which one may try for Experience sake, altho' the Walnut be a Tree which bears Catkins or Juli, and the Peach does not; but yet the Peach, according to your Observation, has two sorts of Blossoms upon one Tree, *viz* what are commonly call'd false Blossoms, and Fruit Blossoms; or in our Terms, Male and Female Blossoms.

I remember once you observ'd to me, that the Gooseberry would take upon the Currant, and the Currant upon the Gooseberry, which is uniting Families, which are seemingly more remote than what we have mention'd, the one being a bunch'd Fruit, and the other a single Berry; but I remember you well observ'd at that Time, that you thought it was not the bare Appearance of the Fruit, which confirm'd their Relation to one another, but the Likeness of the Seeds or Kernels, which were enclos'd in such Fruits, for that the Seed or Kernel was what produc'd Trees of the same Order, and that the Pulp
or

or outside Flesh, which encompass'd such Seeds, was only provided by Nature as Coverings for them, or to give them their just Nourishment, and full Degree of Perfection for Geminatⁱon or Sprouting, when they were put into the Ground ; and this seems so reasonable, that 'tis worth our while to consider further of it, notwithstanding there are some who hate new Discoveries, when they are not their own, and deny every thing which they cannot comprehend. But you have too much Reason on your side to give way to any Opposers of that Race. By the by, the Plumb, Peach, Nectarine, Almond, Abricot and Cherry, have all Kernels so much after the same manner, that your Reasoning seems to determine why they agree so well together ; and so has the Gooseberry and Currant.

For Reasons of this Nature, one of your curious Brother Gardeners has this Year dress'd up a common Hawthorn with Grasses of the *Holly*, *Piracantha* and *Medlar*, as bearing Seeds much like one another : Nay, he has likewise put the Rose upon it, for the sake of the Likeness the Rose Fruit bears to that of the Hawthorn ; and as they are both prickly on their Wood, none of these Trials, in my Opinion, should be discourag'd ; for whether they succeed or not, our Understanding is improved by them ; the Pear I have seen grow very well upon the Hawthorn, or White-thorn, in two or three Places.

The same Person is likewise experiencing, whether the Orange will not take upon the Apple ;

Apple, or the Apple upon the Orange; and if the Pomegranate will not join with the Medlar; but in a few Months, we shall be able to discover the Success of one and the other, which I shall communicate to the Publick in my Monthly Papers.

I am your humble Servant to command,

R. Bradley.

P. S. Pray examine what Agreement there is between the Mistletoe and the Mezereon.



*An Account of the Stove built by
Mr. Fairchild, Ann. 1721.*

THIS Month, viz. March 1721-2. I observ'd, that the Front Wall about two Foot high with the Fire at the Back, and cover'd with common Melon Frames and Glasses, had not only brought the *May-Cherry* into Blossom, but had brought the Fruit to that Perfection, that to judge reasonably of it, it must be ripe about the beginning of *April* at the latest.

About the Middle of this Month, an Apple-Tree, which he had planted against the same Wall was in full Blossom; so that there

is a likely Appearance of ripe Fruit about a Month sooner than usual.

Roses were advanc'd so much in their Growth, that the Buds about the beginning were colour'd, and yet all these were late planted last Winter. The Heat of the Wall, I believe, did not only make them push their Blossoms forwarder than ordinary, but contributed to make them grow in their Root, and get Nourishment as soon they were planted ; but this Matter I shall not explain now, but defer 'till the Month of *May* or *June*, when I shall have an Opportunity of enquiring into some Experiments which are making upon the same Account: However, I can say this, that yet only those Frames at the late Mr. *John Millet's* at *North-End* have been forwarder ; and I question whether these may not be as forward next Year, when the Trees are stronger. I shall take occasion likewise, at a convenient Time, to set forth the Method of accelerating the ripening of Fruits after Mr. *Millet's* manner, that whoever has a mind to try, may be capable of following both Practices.

This Spring, upon the foot of what I have related in my Monthly Papers for this Year, of what was done by Mr. *Curtes* of *Putney*, concerning Cuttings of Vines being planted in hot Beds, and their shooting a great Length in *February* ; I have seen abundance of Vine-Cuttings, that have shot very vigorously, and some Plants which had good hot Beds, had Bunches of Blossoms upon them ; but I am engag'd not to declare the Garden where they now are, 'till I see the Fruit

Fruit full ripe ; however, I have leave to mention thus far, that there is such a thing at present upon Vines growing in Pots. So far we have hopes of bringing Grapes near two Months forwarder than our Climate alone will ripen them.

But to return to Mr. *Fairchild's* Frame ; under the low front Wall of his Stove, the Border which was three Foot wide was planted with Aconites, Julips, Hyacinths, Junquils, Anemonies, Ranunculas, and other Spring Flowers ; by what I can observe of them, they are about three Weeks before those in the natural Ground, but the Trees nail'd to the warm Wall are about six Weeks before the natural Season. If we consider this, we may learn that it is not only the warm Air to the Parts of Plants which are out of the Ground, but a Warmth likewise which must be given at the same time to the Root that must forward a Plant ; and as such Warmth is agreeable to a Spring-warmth, so the Plants make their Progress.

Within the Stove, I observ'd several foreign Annual Plants coming to Flower, as the *African* Marygold, and the *Nastertium Indicum*, which were raised in *November*.

Mr. *Whitmill* has now a large Bed of them sow'd at the same Season, and he supposes, that the *French* Marygolds may thereby be less rampant than the Plants that are sown in the Spring, because those which are now coming into Flower, are not above two inches high. But thus much we have made an Improvement, that by that time the first Crops of Cucumbers are generally cut, there will

be Flowers of the *Nastertium* to eat with them, as there used to be with the Salads at *Midsummer* ; and the present Practice upon our new Improvements may have likewise this good Effect, that it may put others upon the same Trials ; for tho' there are some, who yet will not allow there can be any Improvement upon the common old Way of Gardening, yet when they see these Experiments are not made in vain, their own Interest must lead them to follow the Example.

While I am mentioning Mr. Fairchild's Garden, I must observe, that a large Bon Chretien Pear-Tree, which he removed last *July* with the Fruit upon it, is now in good Health, and blossoming as fair as other Trees ; there was only a few Branches taken from it, which would not lie against the Wall ; at the same time of Year likewise he transplanted Honey-suckles and Jessamines, which stood very well, and blossomed freely.

Last Summer about the End of *June*, I likewise saw several Peach Trees and one large Abricot Tree removed, when the Fruit was upon them, and this Spring are in very good Health ; the Fruit of the Peach-Trees ripen'd very well.



To Mr. R. S. concerning the Ordering
of Orange-Trees brought from Ge-
noa.

S I R,

THE Orange Trees I have sent you, which came from *Genoa*, seem to be in good Health, their Bark is fresh, and the Shoots of the Head are strong, full and green; I took them out of the Chest upon their Arrival, for fear of their getting the *Must* or Moldiness, which might have injur'd them; and from the Day I took them out of the Chest, to the Time the Carrier went from *London*, I laid them upon the Earth in a shady Place, which help'd to keep them in good Order by the Correspondence they had with the Effluvia or Vapour rising from the Earth. I give you this Relation, because when your next Parcel of Orange-Trees come to *London*, they may be treated in the same manner before they take a second Voyage to your Country-house; and especially if the green Shoots of the Heads of the Trees are any way dry'd; for then the laying of the Trees upon moist Ground, where a moist Vapour is constantly flowing, they will recover, and fill themselves, so as to become fit for Vegetation; but when they are dry in their Shoots, and by way of Recovery they are plung'd into Water, as the common Practice is, they are over-burden'd with watery Parts; which, tho' such Treatment may make them

them appear healthful for a Month or two, it ends in Sickness ; for this sudden Refreshment only satisfies them for a little Time, but the gentle Refreshings of the Vapour, which gradually fills their Parts, assists their Health. 'Tis somewhat like the Case of Animals, who have been a long time without Provisions, and when they come suddenly into plenty, overcharge their Stomachs, and ruin their Constitution ; but when Creatures become thus half-starved, we find that if their Aliment is distributed to them by gentle Degrees, they recover their Health and Vigour.

But supposing the Trees to be in as healthful State as any that come from abroad, we should let both their Stem, Roots and Branches partake of the Moisture or Vapour of the Earth, two or three Days before we plunge them in Water, and then in an Hour or two to lie in a Pond or River will be full enough for them. When this is done, prune off only such Roots and Shoots as are dead or wounded ; and at every Wound, either in Root or Shoot, lay on some soft Wax, or other such soft Plaister, that the Circulation of the Sap may not be interrupted ; but by no means cut off any of the live Roots or Wood, for that contributes to make the Tree shoot weak and sickly, as I have experienced. The Trees I have had from abroad, I have always planted with their Shoots on as they came over, tho' it was not agreeable to the common Practice ; and in three Years time, they have made extraordinary Heads, far exceeding those that were cut : But then
the

the second Year of their Growth, I prun'd off such of their Shoots as grew disorderly ; for then the Trees had got Strength, and were more able to bear wounding, than in their first sickly Year.

When they are prepar'd for planting, we may either set them in Baskets, and plunge the Baskets in Earth upon a gentle hot Bed, or else set them in a well prepar'd Bed of fine Earth ; or according to Custom, plant them in Pots, and set them in a hot Bed, or in a Glass Case : But which ever way we take, we should shade the Stems and Branches from the great Heat of the Sun ; for too much Heat of the Sun prevents them in their Growth.

The first Way I mention of planting in Baskets is, I think, the best, and recommend it to you before either of the rest : But be sure in housing them in the Winter, allow them Room enough.

You may prune them more, when they have gathered Strength.

I am, SIR,

Your most humble Servant,

R. Bradley.

To

To Mr. A. R. concerning the Management of a Piece of Ground about one Acre ; with some Observations relating to Fish, Poultry, Rabbits, and preparing or curing of Pork and Bacon, adapted to the Service of a Family of seven or eight Persons.

S I R,

ACcording to your Desire, I am set down to give you my Thoughts concerning the Advantages you may reap from the Piece of Ground, which you design to make into a Garden of Profit. And first, I shall prescribe the Method of fencing that Part of your Ground which lies next to the River, so that the brisk Current of the Stream may not continue to wash away any of your Ground ; and even by the means I mention, you may recover that Ground which you have already lost by the quick Course of the River.

When you have found how far your original Bounds have reach'd, provide long Sets or Stakes of Willow, rather with their Tops on than to have them cut off, as the common way is, unless there should be Occasion for any Force to drive them into the Ground, and then the Tops cannot remain on them ; but for the Way of planting them, it is commonly done by Means of an Iron Crow, or a Pole guarded or pointed with Iron, to make the Holes for them.

These

These Holes should not exceed a Foot distance from one another, and the Sets put in a Foot or more into the Ground, or two Foot if possible; when they are all planted, wattle them with Willow Twigs together at the Top, and in two or three Years the Stems will become so large, as to meet within seven or eight Inches of one another, and in five or six Years within two or three Inches, if they like the Ground.

In the mean time the Current of the River, which formerly annoy'd and wash'd away your Land, will be resisted and diverted from its wonted Violence by the living Fence of Willows, and you will have time to fill up the intermediate Vacancy between the Land and the Willows with Rubbish, or such like Materials, as will lay a sure Foundation for the Recovery of your lost Ground. Some of my Acquaintance have fill'd such Spaces with Willows at first, which by Degrees have filled up the whole Vacancy. These Hints, I think, are necessary first to be consider'd, that your Land may be safe before you plant upon it. It has been practis'd with great Success.

But as all Rivers are inclin'd to rise or fall in their Waters, we may chuse those Seasons of filling up the Vacancies between the Land and the Willows, when we least expect Floods and Inundations, that the Earth or other Matter, which we lay to fill up such Places, may have due time to settle and fix it self before the Rivers encrease their Waters too much; for fresh lay'd Ground will wash away by every little Motion of the Waters:

'Tis then loose and light as Wheat-Flower, which will fleet upon the Water; but when it has had time to settle, and fix it self, is like Flower made into a Paste, which then has its Parts so closely bound together, that Water can hardly separate them in a long Season.

I advise the Willow Sets to be planted rather with their Heads on, than to have them cut in the common way, because this Cutting robs the Sett of its Freedom in circulating its Sap; for we must consider many Vessels which are known to convey Sap, must loose their Office by pruning or cutting; and when a Plant is put into the Ground without a Root, 'tis always necessary to preserve as many Vessels entire as possible; for by Experience we find, that the less a Plant is wounded, the better 'twill grow, or in other terms, its Luxuriance will prevail: And for this Reason we practise the cutting and wounding of Fruit-Trees, which shoot vigorously, to check them, and bring them into a bearing State; for such Wounding takes off the Vigour of the Tree, and brings the Tree to that moderate way of Growth, as makes it produce Fruit; but in the Case of Forest-Trees or Willows, where Fruit is not our Design, but increase of Bulk is our chief End, every thing should be done to advance their Vigour. If some Gardeners do not come into this Measure of Thought concerning Circulation of Sap, it is not so much their Fault, as their want of Knowledge in Anatomy; for without they knew what the Circulation of Blood is in Animals, 'tis impossi-

impossible they should understand what the Circulation of Sap is in Vegetables.

Now that I might have sufficient Proof against the greatest Opposers of the Doctrine of Circulation of Sap in Vegetables, I have prompted my most curious Friends to make Experiments ; that when I could produce a sufficient Number, I might set down with the greater Pleasure to explain to the Lovers of Gardening, how the Circulation of Sap is perform'd, and how necessary it is for every Practitioner in Gardening to observe it, for his Conduct in Gardening or Husbandry ; for without that Knowledge, we are as much at a loss in our Proceedings, as the Physicians were in their Practice, before Dr. *Harvey* discover'd the Circulation of the Blood.

'Tis true, I have already more Experiments than are necessary to convince a Man of Learning ; but I am still directing many more in a plainer way, to convince those who are yet ignorant of it : And I shall in some of my succeeding Writings publish my Thoughts upon it in such a manner, as may render the Doctrine of the Circulation of Plants easy to every Gardener ; the Experiments now concerning it lying as widely distant from one another, as Words in a Dictionary ; which, tho' at present, every one singly has its Meaning, yet as they are now plac'd, have no Coherence, nor can be render'd of use 'till they are put together in due Order.

But let us now proceed to the Garden itself. Near the River-side, you tell me, you have a Canal of one hundred forty Foot

long, and twenty five Foot over ; and this, you say, has either at present, or may have, a constant Communication with the River, by means of a Wheel which the River may turn constantly, and will throw Water into your Pond : Now it is certain, that where such a Current can be maintain'd, a Pond of the same Size will feed and keep half as many more Fish, as it would do if it was only standing Water, or fed by a little Spring ; for in the constant Course of the River Water thro' it, there will be a constant Supply of feeding Matter brought in with the Water, which will be grateful to, and serve partly for the Fishes Nourishment ; and especially, if your Canal be so made, that the Fish in it are given to breed ; but that should be always avoided, where we would have our Fish thrive and grow large : And if we would prevent their breeding, it is necessary to let the Sides of the Canal be cut downright, and fenced up with Plank, so that there be not any part of the Canal less than two Foot deep in Water at least ; for a Water of that depth will never hatch any Spawn of Pond Fish : And then if we take this Care of our Fish, rather to make them feed than increase, we must also provide some deep Places in the Canal of about six or seven Foot Water ; for it is a certain Rule, that all Fish in Proportion to their Bigness will chuse to lie in the shallowest or deepest Waters, the very small in the very shallow Places, and the very large in the deep ; and without such Deeps, the very large will not thrive.

In a Pond of the Bigness you mention, if the River was not to feed it, you might maintain about fourteen Brace of large Carps, and twice as many Tench, to thrive well; but as the Pond is fed by the River, you may well enough maintain twenty one Brace of Carps, and forty two Brace of Tench, and expect them to prosper, without giving them any extraordinary Feed; but for the sake of the Pleasure it may be to you in viewing your Fish now and then, it may be proper enough to use them to feeding at some certain Hour every Day, that you may take them as you see convenient; they will soon know you, and come at any Call you use them to, as I have often seen in many Places: And if among your Carps and Tench you was to put in some Trouts and Bream, they would become as tame and familiar as the rest. I am assured by a Gentleman of known Integrity, that at or near *Salisbury*, some Years ago, he has seen Fish made so tractable, that every Evening they would leave all Quarters of the Pond, and come to their Feeding-place, where every Night they were lock'd up; so that the Pond could not well be robb'd: The Trouts which were usually fed at Sir *William Bowyer's* near *Uxbridge*, and the large Jacks or Pike at the same Place, which would come to one's Hand, are Instances of the easy taming of Fish, and are known to almost every one who has been near the Place.

I have seen Carps thus tam'd, fed with Raspings of Bread, with Green Pease, and at *Rotterdam* with Spinage Seed, which they
eat

eat very greedily; but the Trout is commonly fed with Paste made of Wheat Flower and Water.

The late Queen *Mary* had a Present of fine Fish from *India*, which were not more extraordinary for their Scarlet and Gold Colours, than that they liv'd for a long Time in a large *China* Bason; and I am assured by some Persons of Honour, that they were so tame, that they would eat out of the Hand small Pellets of Paste, with which they were fed once a Day.

And my own Experiment of hatching the Spawn of Fish in little Pans of Water, and bringing them to feed when I call'd them to me, confirms, that we may tame them, and bring them to our Hand at Pleasure.

When you store your Pond, put in the smallest Fish you can get, rather the Spawn of one Year than of two, or rather of two Years old than three; for the younger they are when they change the Water, the better they thrive; nay, a Fish put in at three Years old, will not at six Years be so large as a Store-Fish put in at one Year old, will be in three Years.

The Feeding of Fish has yet another Convenience in Ponds where they breed; for the Small as well as the Great will come to the Feeding-place at the Feeding-times, and may easily be taken with a Net, and remov'd to other Ponds without the Trouble of laying our Ponds or Canals dry; and it is necessary that we every Year discharge our breeding Ponds of the young Fry, or the greatest Part of them; for they rob the greater Fish
of

of their Nourishment, so that they do not grow half so much as they might do. An instance of this Kind I observ'd in the little Pans, in which I hatch'd my Roach, Dace, Bleak, &c. for tho' they had Earth at the Bottom of the Pans, and fresh River Water every other Day, besides Wheat Flower, grated Bread and Paste, yet in *September*, my Fish were not above half as large as those that were hatch'd in the River, and had the Liberty of natural Food. Thus far we may discover, that 'tis not our Interest to crowd Ponds with Fish; for if a Pond be over-stock'd, the Fish never thrive.

In the Spring Season, when Frogs and Toads begin to appear, suffer as few as possible in your Carp Ponds, but destroy them before they spawn, so that they and their Generation perish at once; for whether these horrid Animals do Mischief or not to the Carps, by poisoning of them, as is reported, they certainly rob the Carps of great Part of their Food.

'Tis said, that Frogs and Water Toads at the Time when they commonly generate, will fix themselves upon the Heads of the Carp, and there remain 'till the Carps die: On the other hand, I have been told, that Carp are poison'd by eating the Spawn of these Creatures; however, 'tis seldom that Carps thrive where there are many of these ugly Creatures.

'Tis likewise improper to have any Eels in a Carp Pond, whether the Pond be for breeding or feeding, for they are great Devourers, especially of the Spawn of Fish; unless indeed a Pond be over-power'd with
Frogs.

Frogs and Toads, and Fish do not breed in it ; then the Eels will help to destroy those Vermin.

From some late Observations, I am apt to believe, that the Eel is Viviporous ; that is, it brings its Young alive into the Water, contrary to other Pond-Fish ; for about the *Buoy in the Nore*, the Fishermtn take an Eel-like Fish about *Christmas*, that has then its Belly-full of live young Ones, almost as small as Hairs ; and about that Time of the Year, the River and Pond Eels are all bedded in the Mud, or folded over one another, which, I suppose, may be their way of generating ; and I wish about that Time some of them were examin'd, for it is yet uncertain how they breed.

But let us now see what Profit you may expect from your Canal, which contains about twelve Rod of Water. We shall suppose that all the Fish you stock your Pond with are Spawn of one or two Years old. And three Years after stocking your Pond, if it feeds pretty well, your Carps will at a moderate Price be worth two Shillings a-piece, and your Tench one Shilling *per* Fish ; for these are rarely brought to Market but in *London*, and even there the Prices I set are not esteem'd dear.

	<i>l.</i>	<i>s.</i>	<i>d.</i>
Then your forty two Carps } are worth }	4	4	0
And your eighty four Tench,	4	4	0
Which makes	8	8	0

Now

Now this Sum alone, divided into three equal Parts, shews us how much the twelve Rod of Water will gain by the Year, which is upwards of *two Pounds thirteen Shillings per Annum* ; which is very profitable.

Now if you will suffer your Pond to breed, then it may be stop'd on the Side, and save you the Expence of boarding it. But whether it be done one way or other, if the River runs thro' it, you may have Crayfish in it, which is yet an Improvement. If it is boarded on the Sides, then there must be some Holes left in the Boards for the Crayfish to lodge themselves in the Sides of the Banks, for there is their Residence ; but if the Banks are stop'd, then 'tis so much the better, and the Crayfish will increase the more, as we may observe in those Rivers where Crayfish are the most frequent. If they should happen to breed in your Canal, they will be very numerous in a little Time ; and if they are agreeable to you, either for your own eating, or to dispose of otherwise, you will find an extraordinary Advantage from them ; they will thrive well in any Trout River ; their common Price about *London* is 8 s. per Hundred, which will surely make your Canal worth four Pounds *per Annum*, or more Money, if you mind to supply it with young when you take away the old Fish, or take care that your Water is not over-stock'd.

Upon this Water you may likewise keep six Couple of Ducks, which for laying early and bringing forward Increase, should be of the nook'd Bill sort, and from that Kind one might have young ones fit for killing about

the later End of *March*, as I have seen this Year sold in the *London* Poulterer's Shops for two Shillings a-piece ; but supposing every one of the Young they will produce worth a Shilling at the first Hand, I think one can hardly reckon less than forty Shillings for the Encrease of six Couple of Ducks, deducting all Hazards and Expence of feeding them.

Now I suppose those which you keep 'till they are full grown, will not be of less worth to you, because as you will have a Warren, and many Offals besides the Entrails of Rabbits, there will be no great Quantity of Food to be bought in for them: But where many things depend upon one another in this manner, 'tis the Care, and Industry, and the Master's Eye, which makes the Profit ; for 'tis like a Watch or Clock which depends upon many Wheels, and will, while they move regularly together, mark to us the Hour of the Day, and do its Office punctually ; but if any one Wheel be out of Order, the whole Machine stands still. In Farming, where we have many Things to think on, which depends upon different Management, I think we should always carry about us a List of the Subjects we have under our Care, and mark out the Time of the Day, when we should visit each Particular ; and by such a Method, our Memory will be free and undisturb'd, and our Business be done with little Trouble.

But I have now done with your Canal ; I shall in the next place give you my Thoughts concerning your other Pond or Moat, where-
in

in you propose to keep Pikes or Jacks. I suppose I need not tell you, that they are the most voracious Fish that the fresh Waters produce, even so greedy as to prey upon one another, as I have more than once observ'd. If the Water Toad or Frog should in that Pond chuse their Habitation, the Jack will be sure to fill his Belly, but his Flesh is never the worse for that; the Fish which only can keep him Company without Danger are Eels, Flounders, and the Pearch; the two first are as voracious as himself, and have a constant Guard over themselves; for their Abode is always in the Mud, leaving only an Hole open at the Mouth, at which they suck in their Prey as it passes by. In my Earthen Pans which I have mentioned, where I hatch'd my Fish, I had some small Eels, not thicker than coarse Thread, which for six Months were always bury'd in the Mud or Earth at the Bottom of the Pans, and only a small Hole open in the Mud, where their Mouths lay. I have often seen them take a Fish as it was passing by them; and if I had not changed my young Fish into other Pans, I should have lost them all.

In other Pans, I had some young Flounders, which were hardly bigger than Silver Pence, buried in the Mud like the Eels, and those too drew in my young Fish, and impair'd my Stock as much as the Eels; so that I was forc'd to put my scaly Fish by themselves. But what was remarkable enough, I found that in every Earthen Pan, where I put the Tribes of young Fish, there was always a young Jack or Pike, which lay con-

stantly in one Place, where he had made himself a little Shelter ; I could never observe him stir, but when he struck at the Fish, as they were passing by him ; and for this Reason I was forc'd to put my Pikes in Pans by themselves, and now and then fling them a few of my other Fish : For the Pikes, little as they were, were as voracious as the largest of their Tribe.

Observing that in every Parcel of Spawn that I had taken out of the River, there was always a young Pike among them ; I began to question, whether the Pike, when it lay'd its Spawn, did not lay it in Parcels among the Spawn of other Fish, that its Young, when hatch'd, might be immediately in the Way of its Prey ; if so, the common River Fish are never safe, either in the Egg, or after they are hatch'd, their Destruction is premeditated.

Now the Guard which Eels and Flounders have against this Tyrant of the Water, may reasonably lead you to make them Inhabitants of the same Pond ; and if he should be hungry enough to attempt them, they have the Mud at Command against the Pike, and every one knows the Pike delights in clear Waters.

The Pearch may likewise keep the Pike Company in a Pond, for the sharp Fins on a Pearch's Back arms him too well to invite the Pike to attempt him ; but wherever these Fish are together, they should have Roach and Dace for their Support, and some Water-Weeds should be planted for their Shelter and Nourishment ; for where there are Water-weeds, there will
also

also be Water-Insects, which help the Feed of Fish. If your Pike are large, take care of young Ducklings, for they will take them.

When your Ponds are thus provided, you need not make a Stew Pond for Fish; for by feeding your Fish daily, you will have them at your Command at any time in this Pond; likewise, if the River passes thro' it, I would advise you to put in some Crayfish; and as it is near as large as your Canal, one may justly reckon it to be worth three Pounds *per Annum*. I would certainly contrive to have the River run thro' both: Besides the Benefit of the Wheel, which need only be used now and then.

You may put into such a Pond as the last about forty Eels, and as many Flounders, about ten Brace of Pikes, and as many Pearch, and your Eels will never taste muddy.

While I am giving you these *Memorandums*, I think it necessary to remind you of trying Mr. *Harding's* Water Wheel, which I have mention'd in some of my Monthly Papers; for I am persuaded it will be of great Use to you.

As far as I am yet gone with your Garden, it appears, that about twenty two Rod of your Ground turn'd into Water, will afford you the following yearly Profit, *viz.*

Your Canal Fish, consisting of	<i>l.</i>	<i>s.</i>	<i>d.</i>
Carp, Tench, Crayfish, be-	}	4	0
sides Trouts and Bream, is			
worth about			
Your yearly Benefit by Ducks,	2	0	0

Your

Your yearly Benefit from	l.	s.	d.
your Moat or other Pond			
by Eels, Pike, Pearch,	3	0	0
Flounders and Crayfish, a-			
bout	—	—	—
In all about	9	0	0

Now this, I think, is a very good Return for so little Ground, and there yet remains one hundred thirty eight Rod of Ground of your Acre to be improved otherwise.

I observ'd by the Draught of your Ground, that your Orchard Trees take up about thirty eight Rod of Ground, or are so dispos'd, that such a Quantity of Ground will bear little else for Profit ; for the Grass in such a Spot, did it lie all together, would not be worth above five Shillings a Year at most, because of its rank and sower Taste.

Let us suppose then, that in the thirty eight Rods of Ground, there are as many Trees of good sorts of Apples and Pears, as there are Rods in Measure ; these Trees, if they are well grown and in good Order, as you seem to intimate, may, at a very low Rate, be reckon'd worth five Shillings a-piece each Year, one with another ; even as the Case is now, where by injudicious Management of Trees, they are so subject to fail.

I have known some Standard Pear-Trees, that have brought a good Crop of Fruit every Year, when they have not been prun'd, or known a Knife, when others that have been cut have not had any Fruit ; some Pear-Trees I have known, that have been singly so good, that the the Fruit has been sold for
forty

forty Shillings *per* Tree each Year, others for twenty Shillings *per* Tree; and some Apple-Trees, which have singly born Fruit worth twenty Shillings a Year about *London*. Now considering that the Plenty of Fruit depends chiefly upon the good Management of the Trees, it is well worth our while to have good regard to that. In the Western Parts of *England*, where Apples are very plentiful, and are of the cheapest Price, a good bearing Tree can hardly be worth less, one Year with another, than five Shillings, and this Rate in general for all Trees that are healthful, I think, is moderate enough; therefore if thirty eight Crowns, or nine Pounds ten Shillings, be the Gain of your Orchard at this Price, then from sixty Rods out of your Acre in Water and Orchard, you have the Benefit of eighteen Pounds ten Shillings *per Annum*.

I know very well, that when Fruiterers go about the Country to buy Orchards of Fruit, their Price is not always at this Rate; for they run the Hazard of Loss, either by Blasts or high Winds; they are at the Expence of Gathering, Carriage, and House-room to keep the Fruit 'till the proper Season for exposing it in the Markets; and then there may be a great Loss by untimely or accidental rotting of the Fruit; so that their first Price in the Orchard cannot be above half as much as perhaps the Fruit will sell for in the Market: But then if Gentlemen have no more Fruit than what they can use in their own Family, or oblige their Neighbours with, the full Market Value is in that Fruit,
and

and amounts to much more than what I have mention'd.

But let us now examine the Profit of the Warren you design, which is to include four Rods of Ground ; in that you may keep ten Couple of Does, and two Buck-Rabbits. If you look into my Monthly Papers, you will find that the Buck-Rabbits must be chain'd in a cover'd Place where the Does come to feed, and by no means suffer a Male Rabbit to live unchain'd, without it be castrated, for else the Male Rabbits eat the young ones ; and 'tis for that Reason, that the Doe Rabbits in wild Warrens lay their young ones in By-places under Ground, and cover them up 'till they can shift for themselves.

The castrating of the Male Rabbits will moreover render its Flesh as agreeable as that of the Female, and it will be much larger and more tender.

It is said that the Skins of Rabbits, when they are in right Season, will pay for their Feed ; however they will sell for a Price which is not to be disregarded. The extraordinary Expence of Oats, Bran and Hay is not very considerable ; the very eating Part is almost clear Profit, for the Offals of a Garden are at least two Thirds of their Support.

The eleven Couple with their Off-spring will eat about four Quarters of Bran in a Year, or forty eight Bushels, which at three Pence *per* Bushel comes to

l.	s	d.
0	12	00

And

And twelve Bushel of Oats will
 be as much as is necessary for
 them in a Year, which at the
 dearest Rate are 16 s. per
 Quarter; so that the Amount
 of Oats is in a Year

l.	s.	d.
1	4	0

The Hay which they may re-
 quire perhaps will come to
 at most, six Trusses, at One
 Shilling each, which makes

0	6	0
---	---	---

Thus we find our yearly Ex-
 pence for the Maintenance
 of the Warren is

2	2	0
---	---	---

The rude Cabbage Leaves, the Turnep-tops,
 the Carot-tops, and the Weeds which too
 frequently annoy a Garden, will make up to
 them what is necessary.

The twenty breeding Does will, if they
 are well fed, bring at least six *Stops* of young
 ones each every Year; but some who now keep
 Rabbits at *Hammersmith*, have about nine or
 ten Broods of young Rabbits in a Year.
 Their Way is, when a Rabbit kindles, to leave
 only five young Rabbits to each Doe, and
 destroy the rest; for they reasonably judge,
 that more than that Number will weaken
 a Doe so much, that she will not breed so of-
 ten as she should do for their Interest. Now
 if your Rabbits breed only six Months in
 the Year, which is to suppose the least, and
 that you was to save only five of a Kindle
 to each Doc, you would have in a Year six
 hundred young Rabbits; which, one with
 another, to follow the Price of the *Hammer-*
smith and some other Rabbit-mongers, would

sell for Six-pence a-piece at a Month old, without consuming hardly any Hay, Bran or Oats ; so that then your Warren would afford the Value of fifteen Pounds *per Annum* ; out of which, if we take two Pounds two Shillings, which is the Charge of their extraordinary Food, there will remain neat Profit,

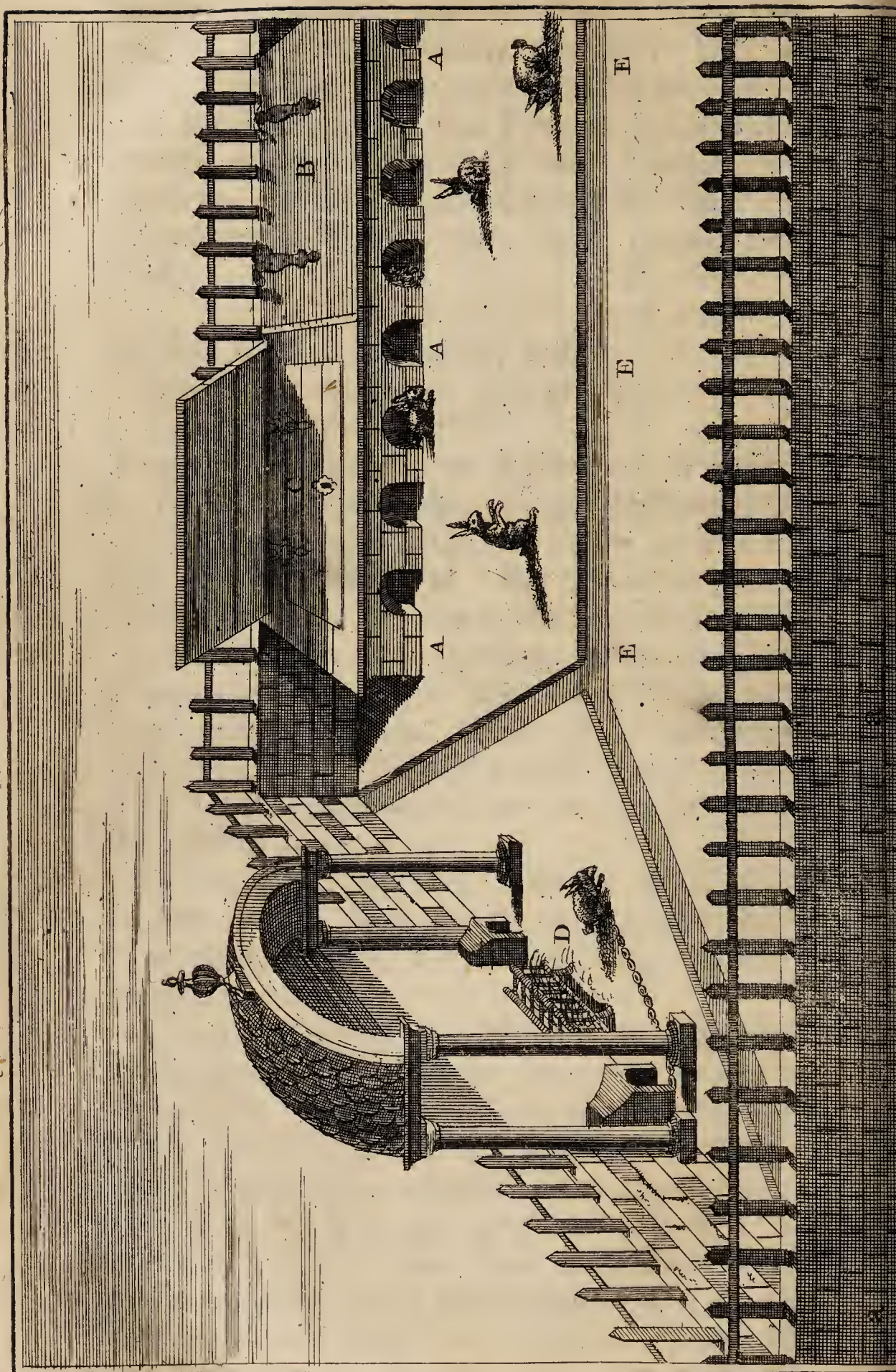
<i>l.</i>	<i>s.</i>	<i>d.</i>
12	18	00

So that from your Ducks, Fish, }
 Fruit and Rabbets, you are } 31 8 0
 a Gainer,

And the Intrails of the Rabbets will always be of Use to your Fish, if you bestrow them in the Water while they are fresh, or else the Fish will not eat them. But we have yet remaining ninety six Rods of Ground : You very well know that Rabbets, when they are about three or four Months old are very large, especially the Males that have been castrated, and then they are worth more than I have mentioned, as they feed upon the extraordinary Diet.

In what I have said, I speak of Things at their lowest Rate ; for to mention them at a retailed Price, they would come to near double the Value.

When you build your Warren, provide that the Ground fall a little, and lie hollow in the middle, so that the Rain may easily pass away, and that the Floor may be wash'd, if there is occasion ; when this is done, pave it all over with Brick, and build your Wall about it a little more than three Foot high, and upon that place Palisadoes. Then two Foot and half from the Wall within side, build



build Walls of about a Foot and half high, leaving Openings or Holes wide enough for Rabbits to go in and out, at a Foot Distance from one another ; so you may have about twenty Holes on a Side ; for tho' you have but ten Couple of Does, the young ones must shift in Cells of their own, when they are about five Weeks old.

Between the Holes you must put Partitions of Boards to separate the Cells ; and let all these Boards be of the same Depth, because over them must be Doors on Hinges to lock down, as you think proper ; and over these Doors likewise, there must be a sort of Roofing of Feather-edg'd Boards, to lie sloping from the Warren Wall to the other, so as to carry off the Wet ; and these likewise should be made to open and shut at pleasure. We have then little more to do than provide Boards to let down before the Holes, as Occasion shall offer, to confine the Rabbits in their Cells, or preserve them in the Night from Vermin.

But to explain the Manner of the Warren more fully, a a a is the Wall which encompasses it.

A A A is the little Wall or Front of the Cells on one Side, in which are the Openings or Entrance into the Cells.

B is the Roofing of Feather-edg'd Boards shut down over the Cells, to preserve them from the Wet.

C C the Feather-Edg'd Board are open'd to come at the Doors over the Cells, which should be kept lock'd.

D a Place of the Shelter from the Weather, wherein two Buck-Rabbits should be kept.

kept chain'd for the Use of the Does; and likewise under this Place of Shelter should be kept the Meat for the Rabbits as dry as possible, but should be as light as may be: It may be made like an Alcove; but every one as their Fancy leads them, may vary the Figure.

E E shews where the lowest Part of the Pavement should be, or the Gutter to drain the Floor of the Warren; which when it comes near the Feeding-house, should turn off to the Corners.

I shall now as I pass along suppose ten clear Rods of Ground are employ'd between your Barn and House, in the nature of a Farm-yard, and in this you will keep your Poultry; which in the Spring about Breeding-time may be about twelve Hens and two Cocks, six Hen Turkeys, and one Cock; these, could they have a Communication with your Orchard, would save you a third Part of the Food you must otherwise give them, if they were to run only in the Farm-Yard; about half a Bushel of Barley may do in a Week for such a Number of Fowls for half a Year, and a Bushel for the other half Year.

Barley is about fourteen Shillings *per* Quarter; so that then one half Year will take thirteen Bushels of Barley, } l. s. d
 which at fourteen Shillings *per* } 1 1 6
 Quarter, comes to about

in this half Year our chief Pro- }
 fit is in Eggs, which, I sup- } 0 5 0
 pose may be worth about

But if we are fortunate enough to have some Broods of Chickens, which may be fit for killing,

ling, either about *Christmas*, or from that Time 'till the End of *May*, the Markets at first hand will value them at a Shilling a-piece, and to judge at the lowest Rate, I think if we reckon twenty Chickens of that Kind, we are not much out of the way. The Value then of Eggs and Chickens will be one Pound five Shillings, and I shall not suppose, that above three Hens are employ'd in the Education of these Chickens.

Then we have nine breeding Hens for the Benefit of the other half Year. Their waste Eggs may be valued at twenty Shillings, and their Chickens, reckoning eight to every Hen, one with another, at six Pence *per* Chicken, comes to two Pounds one Shilling, which with the odd Eggs, makes

Gain'd the first half Year,	l.	s.	d.
	0	3	6
	<hr/>		
	3	4	6
	<hr/>		

The Barley for 26 Weeks, at a Bushel *per* Week, comes to about

Then taking the two Pounds three Shillings and six Pence Expence of Meat from the Profit, there remains	}	2	3	6
		1	1	0

The Turkeys, if they are well manag'd, may in Eggs before they set yield ten Shillings ; and out of six Hens, reckoning all Hazards, we may expect about eight young ones to be brought up by each Hen ; and 'tis no extraordinary Price to reckon them at one Shil-

Shilling and Six-pence a-piece, } 1. s. d.
 one with another, then we have } 3 12 0
 forty eight young Turkeys, }
 which come to

Which with the Profit by Eggs }
 and Chickens of the com- } 4 13 0
 mon Poultry, makes in all }

Which Sum of four Pounds }
 thirteen Shillings, being ad- }
 ded to the thirty one Pounds }
 eight Shillings for Fish, Fruit, } 36 1 0
 Rabbits and Ducks, makes }
 the Sum of

All which is clear Profit, and you have yet remaining eighty seven Rods of Ground still to be improved by Gardening, of which you may reckon near a fourth Part lost in Alleys and Walks and ill Management, let your Gardener be never so careful; however, to set the clear Profit which you may draw from the remaining Part at ten Pounds, is as little as can be supposed, considering your Wall-Fruit, and Espalier or Dwarfs, your Roots for the Winter; your Asparagus, Colliflowers, Cabbages, and an hundred other Articles, which, however they seem trifling, run away with Money were they to be bought.

These ten Pounds added to }
 the rest make } 46 1 0

And you have the Pleasure of enjoying all these at your own Time, and in the highest Perfection.

I am told, that I undervalue the Things I mention; but I think it much more reasonable to do so, than set the Prices too high; because any one who follows these Prescriptions, may have the Pleasure of an unexpected

ted Advantage, rather than find Fault that my Calculations or Valuations fall short of what they expected. But I am sure, that if all I have treated of in this Letter be used in the Family, they will be near twice the Value I have set down.

While I am upon the Topick of Country Advantages, I shall give you some *Memorandums* relating to the Curing of Pork and Bacon, which will admit of as much Enquiry, and be of as much Use, as any thing I have treated of in this Letter.

Some time since, when I eat some Pickled Pork at the House of one of my Correspondents, who signs himself *A. B.* I found his Method of Curing Pork to be much superior to the common Way ; and one has this Advantage in communicating good Things, that sometimes we find some Pleasure from them in remote Parts, where before every thing was rude and unpolish'd ; for this Reason, I prevail'd upon my Friend to give me the following *Memorandums*.

First, The Hog must be full half a Year, or at most nine Months old ; for its Flesh will then eat kindly, and take Salt better than if it was older.

Secondly, When we are disposed to fat a Hog, besides his common Meat, we must give him a Quart or three Pints each Day of Horse-Beans ; this we may continue for six or eight Days before he is put up for Fattening.

Thirdly, When he is thus prepared for Fattening, we are to take Care that he never wants either Meat or Water, and bed his Sty well
with

with clean Straw, or Pease-haulm ; he will eat at first about three Quarters of a Peck of Pease in a Day, and decline in his eating as he grows fat ; about two Bushel and a half of Pease, or three Bushels at most, will bring him into good Order for killing, without making him too fat.

I find then that scalding is much better than singeing him , for by scalding the Pores of the Skin, are much more apt to receive the Salt, than the singed Hogs.

When this is done, let him hang up a Day before we cut him out, and then sprinkle some common Salt over the Pieces to draw out the fresh Blood from the Flesh ; for by this Means, your Pork will take Salt the better, and keep the longer: And some will likewise take out the larger Bones, which, they say, helps to preserve it ; for 'tis about the Bones that it first begins to grow musty, or receive a Teint.

After this, we must provide half a Peck of common Salt, a Quarter of a Pound of Salt-Petre, one Pint of Petre-Salt, and half a Pound of coarse Sugar. These Quantities I use for a Hog weighing about fourteen Stone.

These Ingredients must be well mixed together over a Fire in an Iron Pan, and when they are very hot, Salt the several Pieces of Pork with them, without grudging a little Labour ; for the harder we rub these Salts upon them, the surer we are of Success. I have known a little Carelessness in the rubbing on of these Salts, has spoil'd a whole Hog.

When we have done this, lay the Pieces close together in glazed Earthen Vessels, and
cover

cover them close ; during the first Fortnight, take out your Pork every other Day, and rub the Salt hard upon every one ; and when we put them again into the earthen Pans, observe, that those Pieces which before lay at the Bottom, do now lie at Top, and so change them every time you take them out.

In ten Days or a Fortnight's time, some of the smallest Pieces, if they do not feel hard to the Touch, must have more Salt rubb'd upon them, and in three Weeks time your Pork will be fit for Use.

If we should not change our Pork in the Time of its Salting, as I have mention'd, we should find that those Pieces which lay at the Bottom would be fit for Use, when those on the Top would hardly be better than common Pork, or perhaps not so good. Where this changing of the Pieces has been neglected, I have known the Receipt despised ; for there was never any but those Pieces which were at the Bottom, that answer'd the Design of the Receipt.

I remember once, by Mistake, there was put in among the Salts three Quarters of a Pound of brown Sugar, instead of one Quarter of a Pound, and in the Opinion of very good Judges, the Pork was better than any they had tasted in *England*. I think for the larger Pieces, it renders them more tender.

Thus far are the *Memorandums* concerning the Curing of Pork ; and as I am upon the Subject, I cannot help communicating to you the following Letter from Mr. *Warner*, of the Method used by the People of *Hamburgh*, and in *Westphalia*, for drying of Bacon, in

which chiefly the Goodness of their Bacon consists.

Friend Bradley,

TH Y Favour of the 30th *Ultimo* I receiv'd ; in Answer to which, I send thee the Method used to cure Bacon in and about *Hamburg* and *Westphalia*, which is after this Manner : Families that kill 1, 2, or 3 Hogs a Year, have a Closet in the Garret joyning to their Chimney, made very tight and close, to contain Smoke, in which they hang their Bacon to dry out of the Reach of the Heat of the Fire, that it may be gradually dried by the Smoke only, and not by Heat ; the Smoke is convey'd into the Closet by a Hole in the Chimney near the Floor, and a Place made for an Iron Stopper to be thrust into the Funnil of the Chimney about one Foot above the Hole, to stop the Smoke from ascending up the Chimney, and force it through the Hole into the Closet. The Smoke is carried off again by another Hole in the Funnil of the Chimney above the said Stopper, almost at the Ceiling, where it vents it self. The upper Hole must not be too big, because the Closet must be always full of Smoke, and that from Wood Fires ; for Coal, or Turf, or Peat Smoke, I apprehend will not do so well. The Manner of Salting is no other than as we salt Meat in common ; sometimes they use our *Newcastle* Salt, or *St. Ubes*, or *Lisbon* Salt, and a Salt that's made at *Nuremberg* (not so good as *Newcastle*) made from Salt Springs ; in those Parts they do not salt
their

their Bacon or Beef so much as we do in *England*, because the Smoke helps to Cure, as well as the Salt; for I have seen when dry'd Flesh hath not hang'd long enough in the Smoke, it would be green within, when if it had hung its Time, it would have been red quite through; for as the Smoke penetrates, it cures the Flesh, and colours it red without any Salt-Petre, or any other Art. As to the Feed of their Swine, I saw no difference between their Feed and ours here; if any have the Preference, I believe the *English*, and our Bacon would be full as good, if not better than the *Westphalia*, if cured alike.

I have here above answered thy Desire, and wish it may be approved by our Bacon Makers; for the Bacon will not only be not so salt, but relish better every Way,

Thy Friend,

John Warner.

There is one thing which I cannot help mentioning to you before I conclude this long Letter, and that is the Method of making the famous *Stilton* Cheese, which all that taste it allow to be superior to every other Cheese, either of foreign or *English* Make.

The sort of Cheese I have tasted, tho' I have not been at the Place, and as far as my Palate will allow me to judge, is far before the Chudder or richest Cheeses I have tasted.

The Excellence of the *Stilton* Cheese seems chiefly to depend upon the Management in the Dairy, rather than upon the sort of Grass or Soil ; for I have eaten Cheese made from the Receipt of the *Stilton*, at a Place near *Nottingham*, which came so near it in Perfection, that it would puzzle a good Taste to discover, whether it was not *Stilton* Cheese : However, I was not without Enquiry, and I found that my Friend near *Nottingham*, where the Grounds are not accounted very rich, had then sold above fifty Cheeses, which she had made in one Summer from nine or ten Cows, for a Guinea a-piece at the first Hand ; which, I think, is very good Profit, and I conceive the Receipt will not be unacceptable ; for I find that in our happy Country, the People have not always a right Method of shewing its Beauties ; for I observe, where you have the best Fish in plenty, you have the worst Sauce ; where you have the best Ground and the best Cattle, you have the worst Dairies ; and like a Mine of rich Metal, 'tis often lost for want of Knowledge or good Management.

I wish, tho' you do not keep many Cows, you will begin in your Country to follow the Receipt I send you, which was communicated to me from another Correspondent, who signs himself *A. B.* and to whom I am much oblig'd for several very instructive Hints. For tho' your Number of Cows may not perhaps furnish you with the same Quantity of Milk which is mentioned in the Receipt, yet your Proportions may be the same, and the Rule of Management may be the same ;

same ; and tho' a great Body in Cheese may afford some more Richness than a small Quantity may do, yet you cannot help finding an extraordinary Excellence in a small Cheese made after that Manner, preferable to all the Cheese made the common way.

Stilton is in *Lincolnshire*, and as I am inform'd, the Ground lies high ; so that I conceive the Grass is not very rank.

To make Stilton Cheese.

TAKE ten Gallons of Morning Milk, and five Gallons of sweet Cream, and beat them together ; then put in as much boiling Spring-Water, as will make it warmer than Milk from the Cow ; when this is done, put in Runnet made strong with large Mace, and when it is come (or the Milk is set in Curd) break it as small as you would do for Cheese-Cakes ; and after that salt it, and put it into the Fatt, and press it for two Hours.

Then boil the Whey, and when you have taken off the Curds, put the Cheese into the Whey, and let it stand half an Hour ; then put it in the Press, and when you take it out, bind it up for the first Fortnight in Linnen Rollers, and turn it upon Boards for the first Month twice a Day.

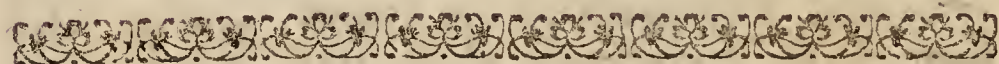
You may see that I have not spared Paper, to give you the best Instructions I can towards your Enjoyment of a Country-Life : I am persuaded true Contentment lies in Retirement ; for I am sure, as I have experienced, there is no such thing in the Publick ;
no,

no, not among those who possess the greatest Riches: Ambition is crowded with Inconveniencies, either vain Hopes, or Envy; whilst a Man, who enjoys Country Retirement feasts himself with Health and quiet Thought.

I am, good Sir,

Your most humble Servant,

R. Bradley.



A Letter to a Gentleman, concerning the Improvement of an Acre of low wet Ground, by Alders or Abeals.

S I R,

YOUR Desire of my Advice, what you shall do with your Piece of Ground, which you observe lies wet, gives me an Opportunity of recommending two Ways to you of advantaging yourself. The first is by planting of Alders, to be cut once in three Years for Poles, or to make a speedy Shelter; or else to bear with Time so long, as to cut at once a valuable Sum of Money from it. We must consider that a continued dropping will make its Way much surer than the most violent Stroke will do; or, as the Case is, Money to be receiv'd every third Year, will encrease more by its Interest, and
is

is more sure, or will improve to more Advantage, than where a large Sum will only appear in twenty Years.

If you chuse the first, that is, to reap a Crop every third Year, you must plant your Ground with Trunchions, or Sets of Alder, in the Spring, about thirty six in a Rod of Ground ; then upon an Acre, you will have five thousand seven hundred and sixty Plants ; and if they take with the Ground, which they will do, if it is often overflowed, then in three Years the Lop, or their Produce in Branches at five Shillings *per* } *l.* *s.* *d.*
Hundred upon the Spot, will } 15 0 0
amount to the Value of about }

So that you have five Pounds *per Annum* for your Acre. Now the Price I have set is much lower than they will sell for, and every Trunchion will bring three or four Branches the first Year, which is abundance more than I have related ; and the second Cutting will give you nine or ten from every Plant ; so that one may reasonably put this Plantation at ten Pounds *per Annum*, one Year with another. And then in twenty Years the Profit would be two hundred Pounds, and Part of the Money paid every third Year to be employ'd to Profit.

On the other hand, if the Ground is not subject to be overflow'd often, you may plant in it about an hundred and sixty Abeals, which if you allow them twenty Years growth, will be worth about one hundred and sixty Pounds. Now the Plantation, in my Opinion of Alders is like enjoying an Estate at present ; and the Abeals is like having an
Estate

Estate in Reversion. The Price of the Plants will be about the same Value, but the Alders will cost more to plant them than the Abeals ; they will both be profitable, and 'tis your own Choice whether one or the other.

I am, Sir,

Your most humble Servant,

R. Bradley.



Remarks upon the Weather and Produce of this Month.

THE two or three Days at the Beginning of this Month were warm and pleasant, but then it changed to sudden Storms of Rain and Hail, but moderately warm in the Intervals. Towards the End we had cold Rains, and the Evenings very cold.

This Month our Markets and Gardens are very slenderly furnish'd with Herbs ; for all the Garden Grounds are now fresh laid down, and sown for Summer Profit, unless such Parts as were planted in the Autumn or Winter Months with Carots, Radishes, Spinage, Cabbage Lettice, and some others.

I saw about the End at my very curious Friend's — *Trowel, Esq*; a large Parcel of Lupines, or the flowering Sprouts of Turneps, and a numberless Piece of Cabbage Plants moving to their flowering State, whose
tender

tender budded Shoots are much superior to any Green at this Season, for now the Brocoli are gone.

In the Management of the Brocoli and these young flowering Shoots of the Cale or Cabbage, or Turnep Race for eating, we must string them or pull off the outside Vessels before they are boil'd, or else they will have a bitter taste, and then the Time that they should be in boiling Water ought not to exceed four Minutes, and after that serv'd on a flat Plate, with Holes in it like a Cullender to let out the Water without pressing them at all; for the pressing these Herbs makes them lose their Sweetness, which consists in the spongy Parts, and those are so tender, that they are easily press'd quite out of the Plant.

If these are rightly managed, no past Green, in my Judgment, is so good, unless we have Brocoli in its Perfection.

I have heard that there were ripe Cherries at Mr. Millet's of North-End about the beginning of this Month; and also large green Abricots and Rose-buds, as there was in his Father's Time.

Mr. Brown at Brentford, I am inform'd furnish'd our Markets with Cucumbers this Month.

Natural Asparagus, contrary to the Dictates of Nature in preceding Years, were about the Middle of this Month brought to Market; I saw several hundreds above Ground on the twentieth Day in some of the Neat-House Gardens about *Tutbill-fields*; we

have yet Parsneps, Carots and Potatoes very good.

This Month I saw Grapes in Blossom, and I question not but in some Places they may be found ripe by the Beginning of *June*.

F I N I S.



E R R A T A.

Page 313. after the Words *last Summer considering*, add *more attentively*. p. 315. for *Carot* read *Carob*. After the Words, *the Pear was a larger Tree*, add, and *delighted in a dryer Soil*. p. 320. for *Carot* read *Carob*. p. 354. read *9 Pence per Bushel for Bran*, and allow *that Price at the end of the Account*.



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